JPRS-TND-84-025

15 October 1984

Worldwide Report

NUCLEAR DEVELOPMENT AND PROLIFERATION

FBIS FOREIGN BROADCAST INFORMATION SERVICE

NOTE

JPRS publications contain information primarily from foreign newspapers, periodicals and books, but also from news agency transmissions and broadcasts. Materials from foreign-language sources are translated; those from English-language sources are transcribed or reprinted, with the original phrasing and other characteristics retained.

Headlines, editorial reports, and material enclosed in brackets [] are supplied by JPRS. Processing indicators such as [Text] or [Excerpt] in the first line of each item, or following the last line of a brief, indicate how the original information was processed. Where no processing indicator is given, the information was summarized or extracted.

Unfamiliar names rendered phonetically or transliterated are enclosed in parentheses. Words or names preceded by a question mark and enclosed in parentheses were not clear in the original but have been supplied as appropriate in context. Other unattributed parenthetical notes within the body of an item originate with the source. Times within items are as given by source.

The contents of this publication in no way represent the policies, views or attitudes of the U.S. Government.

PROCUREMENT OF PUBLICATIONS

JPRS publications may be ordered from the National Technical Information Service, Springfield, Virginia 22161. In ordering, it is recommended that the JPRS number, title, date and author, if applicable, of publication be cited.

Current JPRS publications are announced in Government Reports Announcements issued semi-monthly by the National Technical Information Service, and are listed in the Monthly Catalog of U.S. Government Publications issued by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Correspondence pertaining to matters other than procurement may be addressed to Joint Publications Research Service, 1000 North Glebe Road, Arlington, Virginia 22201.

JPRS-TND-84-025

15 October 1984

WORLDWIDE REPORT

NUCLEAR DEVELOPMENT AND PROLIFERATION

CONTENTS

LATIN AMERICA

NEAR EAST/SOUTH ASIA

SUB-SAHARAN AFRICA

USSR

WEST EUROPE

VICE MINISTER DISCUSSES GUANGDONG NUCLEAR PLANT

HK030827 Beijing ZHONGGUO XINWEN SHE in Chinese 0712 GMT 31 Aug 84

[Report by Li Jian: "Peng Shilu on Guangdong Nuclear Power Station"--ZHONGGUO XINWEN SHE headline]

[Text] Shenzhen, 31 Aug (ZHONGGUO XINWEN SHE)--At the end of nearly a year's talks, the Guangdong Nuclear Power Plant Company Limited to be run with Guangdong and Hong Kong capital will be founded in October this year. This latest progress in establishing the Guangdong nuclear power plant has been revealed by Peng Shilu, vice minister of water conservancy and power.

Peng Shilu said: To ensure that China's first large nuclear power plant project proceeds smoothly, the state has decided to adopt some special policies concerning the project. The main points of these policies are: The nuclear power joint company and its power plant will enjoy all the benefits applying in the special zone; and contractors will be invited to tender for the project design, construction work, and material supply. Of the $3 billion worth of total investment, $300 million will be provided by the Guangdong side, $100 million by the Hong Kong side, and the rest will be raised by the Bank of China. The preliminary design, cost estimate, budget, and annual plan of the nuclear power plant project are subject to direct examination and approval by the nuclear power project leading group under the State Council.

On the construction site of the nuclear power plant our reporter witnessed the preliminary phase of the project under intensive construction. After continuous excavation for 4 whole months, the 67-meter high Maling hill has been reduced to 19 meters. It is estimated that the project of removing the hill and reclaiming land from the sea will be completed 2 months ahead of schedule. The 28-kilometer highway linking Beizaijiao with the Daya Bay power plant has been completed. The carrier telecommunications equipment installed for the Dakeng transformer substation and for the 35-kilovolt power transmission network will be put to use in mid-September. And the retention wall [fang shui wei mu 7089 3055 1602 1612] project jointly undertaken by a French ground treatment company and the Jilin metallurgical and mining project company will begin on 1 November.

The work of calling for tenders and the evaluation of tenders for three major contracts, namely, the overall project design and consultative services for the nuclear power plant and the construction of nuclear island (he dao 2702 1497] and the conventional island (chang gui dao 1603 6016 1497], was begun earlier this year and is now completed. Representatives of the French electric power company Framatome, and the British General Electric Company have arrived in Shenzhen and have begun official negotiations over the three contracts with the two parties in the joint project. It is expected that the contracts will be signed in late September or early October.

CSO: 5100/4139

DLVELOPMENT OF PRC NUCLEAR INDUSTRY VIEWED

HK170619 Hong Kong WEN WEI PO in Chinese 17 Sep 84 p 2

[Text] Beijing, 16 Sep (ZHONGGUO XINWEN SHE)--In an interview with a ZONGGUO XINWEN SHE reporter the other day, Jiang Xinxiong, minister of nuclear industry, answered questions on the development of China's nuclear industry raised by the reporter.

Question: Since you assumed office as minister of nuclear industry, China has carried out extensive exchanges of nuclear technology with many countries. Comparatively speaking, what level do you think China's nuclear technology has reached?

Answer: China started building its nuclear industry in 1955. Despite a relatively late start, it has made rapid progress. It has achieved successive technical breakthroughs in atomic bombs, hydrogen bombs, and nuclear power and has also equipped its Army accordingly. It has verified quite a large number of uranium deposits; has established a relatively complete nuclear industrial system, marked by a certain scale and distribution in depth, from uranium prospecting and ore mining and smelting to nuclear fuel production and aftertreatment; and has acquired the ability to develop nuclear technology independently, with the initiative kept in its own hands. It should be admitted that compared with the most developed countries of the world, China's nuclear technology still shows gaps in certain fields. Given an open-door policy, China will strengthen international cooperation in the nuclear field. This will help the development of China's nuclear industry at a still quicker pace.

Question: Can you reveal something about the current state of China's nuclear weapons development?

Answer: To give China the power to hit back in the face of the threat of an unexpected nuclear war started by hegemonists and to strengthen national defense and safeguard world peace, China cannot help continuing its nuclear tests and research and development of nuclear weapons. As is the case with foreign countries, there is a continuous increase in the categories of China's nuclear weapons. Their technological level and quality are also improving. It can be said that China has carried out few tests but its nuclear weapons technology has reached quite an advanced level.

Question: How are things with the development of China's nuclear power plant construction and what is the level to be reached by the year 2000?

Answer: At present, China is building two nuclear power stations. One is the Taishan nuclear power plant, and the other the Guangdong Daya Bay nuclear power station. These two electric power plants will form a network to provide electricity around 1990.

The Chinese Government has formulated guidelines for the development of nuclear power plants. During the period of the Seventh 5-Year Plan, it will also import large-sized nuclear stations into east China, northeast China, and other areas. By the year 2000, due to China's energy supplies being inadequate to meet demand and due to the uneven distribution of hydro power and coal resources, the percentage of energy supplies accounted for by nuclear power will rise further. There will be relatively great development in China's nuclear power plants.

CSO: 5100/4141

RENMIN RIBAO OUTLINES NEW WEAPONS DEVELOPMENTS

HK211449 Beijing RENMIN RIBAO in Chinese 21 Sep 84 p 3

[Article by Fang Zhou and Zhong He: "New Wings Again Added to a Fierce Tiger"--passages within slantlines published in boldface]

[Excerpts] /Nuclear sumarines we have designed and built have joined the rank-defending the coastline./ Our country's shipping industry has successively researched and produced various kinds of surface and sub-surface combat ships such as torpedo boats, high-speed gunboats, missile escort vessels, guided missile destroyers, and submarines, and they are used to arm our naval forces. At the same time, our country has independently designed and built nuclear submarines, which has increased the strength of defending our coastline.

/Guided missile weapons have reached an advanced level./ In order to resist aggression and defend our land, our country has successively developed short-range, medium-range, medium-long-range, and long-range guided missiles. In October 1966, our country conducted a guided missile nuclear weapons test for the first time; in May 1980, our country successfully launched long-range carrier rockets toward the South Pacific. At the same time, our country has also developed and built many types of tactical guided missles, such as ground-to-air missiles and coastal defense series missiles, and used them to equip our army, navy and air force. Their comprehensive properties, including combat properties, penetrating capacity and target precision have reached advanced levels.

CSO: 5100/4142

JIANG XINXIONG ON 'NONNUCLEAR PROLIFERATION'

OW260052 Beijing in English to East and South Africa 1700 GMT 25 Sep 84

[Text] A Chinese official said China agrees to nonnuclear proliferation, but opposes any irrational restrictions imposed on nuclear cooperation.

Speaking at the current International Atomic Energy Agency's session in Vienna, Jiang Xinxiong said the world is attaching increasing importance to the peaceful use of nuclear energy. However, he said the development of nuclear power is quite unbalanced with a dozen or so reactors in the developing countries. He said that, following the peaceful foreign policy in opposing the nuclear arms race, China is working hard for the complete prohibition and destruction of nuclear weapons.

CSO: 5100/4101

WU XUEQIAN SPEAKS AT UN ON ARMS CONTROL

LD261723 Beijing XINHUA in English 1703 GMT 26 Sep 84

[Text] United Nations, 26 September (XINHUA)--Chinese Foreign Minister Wu Xueqian today called on the Soviet Union and the United States to stop their nuclear arms race, resume negotiations on nuclear arms reduction, and immediately stop extending their arms race to outer space. Addressing today's plenary session of the 39th UN General Assembly, the chairman of the Chinese delegation also urged the two nuclear powers to reduce and destroy their nuclear missiles already deployed in Europe, Asia and elsewhere in the world.

He said, "At present, what concerns and disturbs people most is the threat of a nuclear war. Despite innumerable rounds of talks on nuclear disarmament and a variety of proposals to this end, nuclear weapons have continued to increase and nuclear stockpiles have reached extremely dangerous proportions." He noted that with the suspension of their disarmament negotiations, the two nuclear superpowers have further escalated their nuclear arms race.

Wu pointed out that the Soviet Union and the United States possess over 94 percent of the world's total nuclear weaponry, and they alone are in a position to fight a nuclear war. "Should they choose to use only a small portion of their nuclear arsenals, not only the people of these two nuclear powers would suffer, but the people of the whole [world] would be plunged into an unprecedented holocaust," he stated.

Noting that the arms race between the two nuclear powers is extending to outer space, he said that "both sides are stepping up the development of anti-ballistic missile weapon systems so as to reinforce their strategic offensive capabilities through improved strategic defensive means." He stressed, "We stand for the early conclusion of a treaty on the prohibition of arms race in outer space and a ban on research testing, development, manufacture, deployment and use of all weapons designed for outer space warfare, as well as destruction of all the existing outer space weapon systems." He added, "All this is highly necessary for demilitarizing outer space and ensuring its peaceful use by mankind."

Reaffirming the stand of the Chinese Government and people for nuclear disarmament, Wu said, "We hold that efforts should be made to promote progress in conventional as well as nuclear disarmanent."

He declared that "the small quantity of nuclear weapons China possesses is solely for the purpose of self-defense." "China has never participated, nor does it intend to participate, in the nuclear arms race or to shirk its responsibility in regard to nuclear disarmament," he said.

He summed up China's position on nuclear disarmament in the following three basic points:

--"Our fundamental position is the complete prohibition and thorough destruction of all nuclear weapons.

--"As a practical step for nuclear disarmament, we propose that, after the Soviet Union and the United States have taken the lead in putting an end to testing, improving and manufacturing nuclear weapons and have agreed on substantially reducing their nuclear arsenals, a broadly representative international conference should be convened with the participation of all nuclear states to work out together concrete measures for further nuclear disarmament.

--"Before all this materializes, for the sake of reducing the threat of nuclear war and showing good faith in nuclear disarmament, all nuclear states should undertake not to be the first to use nuclear weapons and unconditionally pledge not to use, or threaten to use, nuclear weapons against nonnuclear states and nuclear-free zones and should reach agreement on mutual nonuse of nuclear weapons."

The chairman of the Chinese delegation also stressed that China has always opposed the development, production and use of all biological weapons detrimental to mankind. He said, "The Standing Committee of the Chinese National People's Congress already adopted on 20 September 1984 the decision on China's accession to the convention on the prohibition of biological weapons. From now on, China will join other countries to combat all acts that violate this convention and to work hard for its further improvement so as to advance the whole process of disarmament."

CSO: 5100/4101

BRIEFS

RADIOACTIVE WATER LEAK--Pickering, Ont (CP)--Radioactive tritium leaked into Lake Ontario Monday from a nuclear reactor at the Pickering generating station. Ontario Hydro spokesman Jack Muir said about 13 litres (2.8 gallons) of heavy water containing the tritium leaked into the lake throughout the day. The leak came from a crack in one of Unit Four's reactor heat exchanging units. The heat exchanger cools the hot, heavy water used to cool the reactor core. Lake water is pumped through the unit's cooling pipes and returned to the lake. Hydro crews removed the problem-plagued heat exchanger from service about 9:30 p.m. and reduced the electrical output of the reactor to 55 percent of full power. [Text] [Windsor THE WINDSOR STAR in English 22 Aug 84 p A2]

CSO: 5120/4

NUCLEAR POWER STATION PROGRESS IN CSSR REVIEWED

Bratislava PRAVDA in Slovak 21 Aug 84 p 3

[Article by Alfonz Bednaric: "This Is Where Our Energy Giant Will Stand"]

[Text] "Over here," indicates the manager of facility No 50 of the branch plant of Vodny Stavby responsible for the construction of the Temelin power plant, Vaclav Kriz, "to the left and right will stand two sets of quadruplets, i.e., eight 180-meter high cooling towers. Between them and to the rear lies the site of the 4 1,000 megawatt units."

This is all to be built on a hill between the towns of Temelinec and Krtenov on a 260-hectare site. The homes in Krtenov have already been demolished. Only two remain, which will house the builders of the nuclear power plant. The plant will eventually be our largest, and it is already being called the construction project of the century.

A Giant

The South Bohemian Kraj, which today is a net importer of electricity, will become by the 1990's the largest producer in the CSSR. By the end of 1987, employees of Prague Vodny Stavby (in cooperation with subcontractors such as Ceske Budejovice Surface Construction, Armabeton and Road Constructors from Prague, Brno Ingstav and Industrial Construction, as well as other enterprises) will install, or to put it more precisely, will pour the concrete for the foundation plate of the first of four 1,000-megawatt reactors which will be produced at Plzen Skoda. Between now and then about 6.5 million cubic meters of stone and hundreds of thousands of cubic meters of soil will have to be blasted, backhoed, loaded and trucked away. The four 1,000-megawatt turbines that will be installed in the generating units will bear the winged arrow logo of Plzen Skoda.

When construction is at full swing on this, to date our most ambitious power engineering project, it will employ as many as 6,000 construction workers, and once the equipment installers arrive there will be almost 13,000 people active on the job site.

All of this means that the construction site needs preparation and that support facilities must be built for the people who will work there.

Good Preparation...

...one of our proverbs states, is half of a successful undertaking. The workers of Vodny Stavby are keeping this bit of folk wisdom in mind in their work on preparing the construction site. "Our first people," notes the current construction foreman, Vaclav Kriz, who has been working at this enterprise since 1958, "came to Temelin at the end of March last year. For the first 2 months only 11 employees were building a water works and constructing the distribution box for process water, washing ramps, electrical installations, remodeling an old barn to serve as an auxiliary workshop for automotive vehicles, etc. They also began to remove the first soil and to lay concrete panels to serve as roads.

"Today," Vaclav Kriz looks around, "we have standing an almost completed dressing area for 900 people; cafeterias (for now, food is being trucked in by Temelin Jednota); dormitories for 200 people (for those who must even now be at the site full time); boiler facilities; heat distribution pipes have been laid, though they have not yet been insulated; water purification facilities that will have 90 percent efficiency are nearly finished. The remaining 10 percent is to be achieved in ponds through biological purification. Pure water will flow from these ponds into the Blanice River. This treatment facility, however, is only for the site preparation period.

"We have also completed the first couple of hundred meters of concrete roadways that will be used during the construction of the nuclear power plant. These are to assure that heavy trucks neither get stuck in mud nor stir up dust. In addition to the structures, roads and sidewalks that are near completion (all of concrete), we have also prepared the first areas that will be planted with grass or designated for flower planting. This is because we of Vodny Stavbny want the future builders of this facility to feel as at home as possible."

To the question of how well they have fulfilled the plan, Comrade Vaclav Kriz answered that despite being 6 months behind the original schedule they have been doing fairly well. In the first 6 months they fulfilled the plan at a 102.5 percent level, and they have maintained this pace in the summer months as well. Currently there are only 110 people from Vodny Stavby at the site, and about 240 from the subcontracting enterprises. These small numbers are lost on such an extensive site, but after the work that has been done the project will proceed very quickly.

People are brought to site by Czechoslovak Automotive Transport [CSAD] buses from Tabor, Milevsko, Pisek and Ceske Budejovice, with some of them coming from adjacent villages. For upcoming years, when work will be in full swing, consideration is being given to instituting the factory transportation of workers. After all, from one side of the site to another will be 7 kilometers. This is why we currently are building concrete roads and moving earth (by the end of the year we will have moved 600,000 cubic meters), and already developing the location for the construction of the actual power plant, an area designated as B-1.

Water and Geology

The above-mentioned "biological" lakes are the first water management facilities related to the construction of this 4,000-megawatt nuclear power plant in Temelin, which has been designated as JETE. However, the power plants will require, when completed, 4 cubic meters of pure water for every second of operation. This is equivalent to the peak flow of the nearby Luznice River. Not even the Vltava in the dry season would be able to provide enough water from its normal flow to assure the smooth operation of this power plant. Bringing water in from the Lipno or the Orlik dams, which are about 100 kilometers as the crow flies from the construction site, would not be profitable. For this reason it has been decided to construct two new dams on the Vltava, nearer to the construction site. One will be in Hnevkovice, and the second further along, near the town of Tyn and Vltavou. They will be 10-12 kilometers by air from the power plant and both will have hydroelectric power plants installed in them. This will increase the number of generation facilities along the Vltava cascade from seven to nine. At the same time this will increase the navigability of the Vltava for ships of up to 300 deadweight tons as far as Ceske Budejovice. The pumps and pipes delivering water to the power plant will be installed with backups, to minimize risk in plant operations. The depth of the lakes behind the dams will be such that even in the coldest winters they will not freeze all the way to the bottom.

Because the water entering the power plants must be as pure as possible, treatment plants are simultaneously being built at Cesky Krumlov, in Vetrni, in Ceske Budejovice and at Hluboka and Vltavou.

In addition to water availability, the choice of location for this 4,000-megawatt nuclear power plant was determined by issues of seismic stability. Construction geologists confirmed that the area of Temelin is the safest in this regard. The power plants will stand on a hill above Temelin on a firm rock massif (even though it will have to be blasted to install water pipes, cables and steam lines), which made this site much more advantageous than the original site at Malovice, about 25 kilometers away.

The problems associated with the construction of the power generation giant that will be completed in Temelin in the middle of the 1990's are large. A year ago, when the first builders began their work, they met with some hostility from the local inhabitants. Some people, to be sure, have had and will have to give up the homes that they have inherited from either parents or grandparents, but others were not pleased with the idea of a power plant in their back yards. Some unfriendly propaganda appeared to the effect that these plants would threaten the future of our grandchildren. This was countered by informative lectures arranged by the Czechoslovak Scientific and Technical Association in conjunction with the Socialist Academy and local national committees, which found fertile ground. Now one will not find dissenting opinions. There will be a lot of other problems, though. After all, the housing of the 12-13,000 people that will

be here when construction is in full swing, and the transportation of the thousands of tons of materials that will be necessary, will both require considerable effort. Road and railway transport are already making plans to handle this load. Additional tracks are being laid at train stations, roads are being improved, regular trolleybus service is being set up on a Ceske Budejovice-JETE run, housing is being built in Tyn and Vltavou and in Ceske Budejovice, the heat plants in Mydlovary are being expanded, etc. This preparatory work alone and the related investments will require a sum of Kcs 500 million. Upon the completion of the entire 4,000 megawatt power plant, this figure will have risen to several tens of billions of korunas. But we will have for our national economy and for our households enough of the cleanest of all power--electricity--while maintaining the quality of the air and water, which are also important considerations.

9276
CSO: 5100/3021

ADDITIONAL POWER SAID TO BE ON LINE IN JASLOVSKE BOHUNICE

Prague RUDE PRAVO in Czech 21 Aug 84 p 1

[Article: "Additional Power Added at Jaslovske Bohunice; First Unit of V2 Power Plant Brought on Line"]

[Text] Jaslovske Bohunice, 20 August (from our correspondent)--On Monday evening at 19:39 one of the dual 220 megawatt turbogenerators of the first unit of the V2 power plant at Jaslovske Bohunice was brought on line. At this moment the third constructed facility of the nuclear power complex at Jaslovske Bohunice began to deliver electricity to our power system.

The successful startup of this unit marked the culmination of an 82-month effort by the collectives of the general contractor for the construction components, the Bratislav Hydrostav enterprises; the general contrator for the technical equipment, Plzen Skoda; the investor and operator, Jaslovske Bohunice Nuclear Power Plants; Soviet specialists; and the Nuclear Power Research Institute in Jaslovske Bohunice to construct an additional source of power to meet the needs of our national economy. Despite the fact that the construction of this unit was more than twice as complex as a similar unit at the V1 power plant, its builders resolved all problems as they occurred, even though this took longer than they had originally anticipated. This additional product of Czechoslovak-Soviet cooperation also represents the maturing of Czechoslovak nuclear equipment builders, because all the major equipment was produced, based on Soviet documentation, in Czechoslovak machine building enterprises.

The entire startup process was handled by the operating personnel in its control building, under the leadership of Eng Vladimir Jesek. Also present were test technicians from Bohunice Nuclear Power Plants, Plzen Skoda, the Nuclear Power Research Institute in Jaslovske Bohunice, and Soviet specialists, who gradually made the automatic control systems and equipment operational according to a standard program.

At the moment when the turbine reached 3,000 revolutions per minute the synchronization switch was turned on, allowing the first electric current to flow from the first unit of the V2 power plant at Jaslovske Bohunice to the power distribution center in Krizany. However, this did not end the concerns of the operating personnel. The power industry workers are now trying to see to it, in the course of not quite 3 months, that the turbines of the first unit reach their full operating capacity, thereby increasing the total output of the nuclear power complex at Jaslovske Bohunice to 1,320 megawatts.

9276
CSO: 5100/3021

YRIART CALLS FOR PUBLIC POLITICAL DEBATE ON NUCLEAR ENERGY

Buenos Aires ENERGEIA in Spanish No 45 Apr 84 pp 15-17

[Article by Martin F. Yriart: "Nuclear Energy, a Political Ostrich?" Passages enclosed in slantlines printed in boldface]

[Text] In the field of nuclear energy, as in many others, the political parties arrived at national elections in 1983 with only an approximate idea of the reality they would find when they unwrapped the "package" left to them by the Process. However, in the case of nuclear energy, the Radicals found themselves even more in the dark than on the other subjects of government, and less prepared.

The man called upon to be the key figure in the nuclear strategy of the Radicals, Jorge Sabato, died in November, without ever hearing the announcement on the success achieved by the CNEA [National Atomic Energy Committee] in the enrichment of uranium or being able to participate in the following political miniearthquake, which irrevocably changed that which everyone considered a transition without surprises, that was supposed to result in the ratification of a nuclear policy and the confirmation of Castro Madero as the chief of the CNEA.

Castro Madero was not confirmed on 10 December and the Radicals did not have in December 1983 an obvious figure from their own ranks to place at the wheel of nuclear policy. Dr Enrique Mariano, the Radical member of greatest preeminence in the CNEA, is a researcher devoted to the application of isotopes in biology and medicine and relatively alien to the area of nuclear problems and foreign policy, which are the crux of the present political decisions.

Engineer Jorge Kittle, a recent member, who in the preelectoral period followed the National Line, resolved his conflict of internal loyalties by choosing to remain aloof from the subject of nuclear policy during the campaign despite the fact that his experience in the field of nuclear metallurgy and the development of the technology of fuels drew him closer to the political aspect.

The alliance of Democratic Action with the Radicals, forged in the hours prior to the elections, provided some significant names such as that of Jorge Martinez Favini, a veteran lawyer and political adviser of the

presidency of the CNEA, and that of physicist Mario Mariscotti, one of the most heeded voices within the professional ranks of the institution. Both, however, with Mariano himself, were called upon only as advisers.

When Raul Alfonsin, therefore, only a few days before his inauguration as president of the republic, announced that the Radical Party would make an in-depth study of the subject of nuclear policy and would make a new legal statute to regulate it, it was not strange that those charged with this mission were men completely alien to the CNEA: Jorge Federico Sabato (a lawyer specializing in publi: administration problems), Dante Caputo (a researcher in political sciences devoted to international relations), Roque Carranza (an engineer concerned with economic planning) and German Lopez (a politician famous for his tactical talents).

It is no secret that these Radical Party men, considered the most brilliant of those with whom Alfonsin has surrounded himself, found themselves before a reality totally different than that they expected. The alleged military conspiracy that was being prepared in the CNEA for instrumenting an arms race, the megalomaniac technology allocated to Pharaonic projects, the state within the state which some thought they had seen, even able to make its own foreign policy, quickly dissipated. For the second time in a few months, the Radical Party had to change directions.

The transaction over which Renato Radicella presided was much shorter than expected. The appointment of Engineer Alberto Constatini as chairman of the CNEA, parallel with that of Castro Madero as his adviser, appeared to indicate that on the technocratic level at least, no important changes would be made. The successive statements by Dante Caputo on the signing of the Nonproliferation Treaty and the ratification of the Tlatelolco Treaty contributed to his even more. The hibernation of the Caputo Commission was confirmed when the 90-day period which had been given to it to make a decision went by without any news.

To the already known statement by Constantini that he would not go down in history as the man who buried the Nuclear Plan, was added a more recent one in the sense that Argentine nuclear development would not be sacrificed at the foreign debt negotiation table, thus dissipating an ominous cloud. The inevitable trimming of the CNEA budget, on the other hand, would mean, Constantini asserted publicly when he reported to the Chamber of Deputies Energy Commission, no more than a temporary delay in its plans but not its abolishment.

To judge by the surface of things, there are no problems in Argentina within the field of nuclear energy outside of the economic crisis of the time. Even the Great Opponent appears satisfied. In the CNEA itself, the preservation of the status quo was considered a victory.

Following the advice of Engineer Alsogaray, everything would be a matter of getting through the winter...

The Head of the Ostrich

There are two old Argentine habits: concern with urgent things to the detriment of important things and closing the eyes to reality in the vain hope that if one ignores them long enough, problems will resolve themselves. The worse thing that could happen to the Argentina of 1984 would be to believe, emulating the ostrich, that everything would be resolved thanks to the magic wand of Kronos.

The shameful reality of the nuclear policy, which some are bent on believing, is neither shameful or real. And the problem is not caused by the recurrent crises of the CNEA budget nor by the monotonous nonproliferation reconventions of the United States nor by the struggle--old as time itself--by the various components of the energy sector for obtaining control of its projects.

Politically, the reality is that Argentina was born, grew and reached its nuclear adulthood in a period of 2 decades during which there were only 5 years of constitutional governments, three of which were spent under the anguish of one of the cruelest and chaotic civil wars in the history of our country, and the rest of the time was spent under more or less severe forms of repression in which political debate was effectively abolished or relegated to a merely rhetorical or academic plane.

Argentina nuclear policy was formulated in those years by a small technocratic elite (whose competence and good intentions are not under discussion) and decisions were made by a succession of presidents-commanders in chief through whose head the idea of representativeness never passed. Argentine nuclear policy does not represent the prevailing public opinion of our country (although it should) simply because that public opinion, that political body of citizens never had the chance to express itself nor much less discuss alternatives.

Not even the ostentatious pacifist posture of Argentina in nuclear matters can be considered a consistent political premise. On the 25th anniversary of the bombing of Hiroshima and Nagasaki in 1980, a television channel made a street survey on whether Argentina should or should not make an atom bomb. To the consternation of some and the joy of others, who at that time enthusiastically contemplated the possibility of a war with Chile over control of the Beagle Channel, /the immense majority of those surveyed expressed themselves in one way or another in favor of the bomb./

If a similar survey were to be made today as to the safety of nuclear energy, it would in no way be surprising if /a large majority of those interviewed would express a negative and apocalyptic opinion: "The powerplants blow up."/

On the other hand, to judge by the statements of innumerable public officials, who it is supposed keep current on events, /nuclear energy is the most expensive source of energy in Argentina./

What good is it to scream when discussing whether or not the CANDU or KWU reactors are most suitable for us; whether uranium enrichment is suitable or not; whether we need reprocessing; whether we should have a policy of nuclear exports; whether we should subsidize a components industry (or whether it is the industry that today is subsidizing Argentine nuclear development); what good is all this if the fundamental questions have not been discussed, if public opinion has not had the opportunity to understand the true significance of the atomic era, if the political body is a real unknown in this matter?

Some officials have asked themselves in the past as to what has caused the apparent passivity of the news media with respect to nuclear energy; to what is due the docile acquiesence they showed; why the submissive publication of press communiques and annual speeches without the least criticism or attempts at questioning? How can it be that for almost 6 years the Pilcaniyeu Project was carried forward without a newspaperman asking /just once/ to be shown what was being done there?

The answer to this enigma is that the /purposes/ of nuclear energy and the foundations of its policy were never actually discussed, but only the /technical alternatives/ of its utilization. And that is of interest only to the technocrats, not the political body, and the journalistic circles know very well to whom they sell their product and what is of interest in the street.

When the fundamental subjects are brought to light, then there will be an interested and attentive public opinion. Fundamental subjects may appear at the most unexpected moment, today under the aegis of democracy, and surprise more than one person (disagreeably).

The Rest of the Ostrich

While the ostrich sticks its proverbial head in the sand, the rest of its body remains in view, perfectly recognizable and in a not too elegant position. It is not my desire to carry this similarity to extremes that are against good taste and decency, but the least that can be said, making a concession to humor, is that our nuclear ostrich, speaking politically, today is in a somewhat exposed position.

The fundamental problems in the nuclear era consist of three angles which form a structural triangle: /military uses, energy uses and effects on the environment/. The development of a nuclear policy means having a clear understanding of these three angles of the problem and attaining an explicit national consenses on each of them, regardless of what policy is adopted.

There has been no real political debate on any of these angles in Argentina in which all those involved have actually participated (which means the /demos/ or political body of the entire society).

The results of this is that instead of a policy we have a collection of more or less systematic administrative rulings which have an effect because of their number but which tend to partially cancel each other.

The fact that we have had many discussions "pro foro" on the technico-economic problems leads to the error that we at least have a policy in strictly energetic matters. That is false. The consequence of this is that we continue to think about building nuclear powerplants and creating an industry for critical supplies without having really resolved where the market for that industry will be. Will it be domestic, foreign or both? And all this at a time when it is obvious that at the rate we are going, the domestic market of nuclear powerplants will take 30 years to acquire a large enough scale to justify by itself the existence of a nuclear industry in Argentina.

CNEA officials have often been accused in recent times of arrogance and elitism. That is an unfair accusation. The true attitude has been one of paternalism and in few cases has it been so flagrant as in the ecological angle of the nuclear problem. Paternalism is a remedy which has the virtue of engendering its own illness: childishness. Today in Argentina, with the desire to avoid irritating the servant, to avoid giving unsolicited information so as not to provcke unnecessary fears, to do things without explanation, because we are sure that we are doing well and for the good of the nation, because of all this, we have a public opinion which is perhaps the most ignorant of the problems and dangers (and their antidotes and countermeasures) of nuclear energy among all the countries in which there is a serious atomic effort, with the exception made of Korea, where they use bricks instead of pillows for sleeping.

The most irritating and serious of the fundamental aspects of nuclear energy in Argentina is that of military uses. In a typically ostrich-like attitude, we discuss whether or not we should ratify the Tlatelolco Treaty or sign the TNP (and here once more a popular survey could leave us with mouths agape and dumbfounded) but we have /never/ discussed whether we needed atomic weapons and why we do not know what it is our armed forces are doing in that respect. Supposing that a majority agreed to renounce them, there are very few who have a clear idea of the alternatives of a peaceful nonproliferationist development.

Moreover, with the presence of nuclear weapons (supposedly tactical) in the Malvinas, as the Radical Government has charged, repeating previous statements by the foreign ministry of the Process, two questions are posed. Who has the scientific-technological capability for evaluating the military danger of a direct or indirect nuclear attack on our country? Who has assumed the responsibility for preparing our civilian population for the consequences of a nuclear war?

Finally, given that /there are unprohibited military uses of nuclear energy/, almost all of which have potential civilian uses in a not too distant future (naval propulsion, compact, low power AC power sources), who is thinking organically about this and doing research and development?

The three lines--military, energy and ecology--of nuclear energy are included in another three sides such as foreign policy, scientific development and the industrial plan of Argentina. None of these great subjects of the political debate can be considered adequately presented and discussed if it does not include the nuclear component.

The Ostrich Laid an Egg

At this point in the discussion I figure that some objections have been raised to the arguments presented. At least someone has asked himself of what interest can the problems of proliferation or nuclear weapons have for the readers of an energy magazine. A political interest, mainly. Banned and unbanned military uses are the coin in the international exchange of civilian development of nuclear energy. Pursuant to how one is negotiated, greater or lesser advantages are obtained in the others.

Someone may also have asked himself whether this is the proper time for beginning a debate of that nature. In the reality of politics, the past has already passed and the future is not here yet. Political debates are continuous, not timely. To postpone these discussions means to prolong the /status quo/ and one must ask oneself who the status quo benefits. No one can ignore the heavy weight of the irrational components in politics. The nuclear subje today, throughout the world, is a channel for the expression of those components. Few countries have done less than ours in defusing the irrational components. Ecological activism--which is the emotional face of the ecology--capitalizes on those empty spaces left in the atmosphere by the ostriches when they hide their heads in the sand. It is not strange that the plan for the Gastre nuclear waste depository was one of the first targets for the attacks of sensationalist newspapers (GENTE, SIETE DIAS, LA SEMANA CRONICA). The media always know what to look for.

All this focuses attention on the value of initiative. The dinosaurs perished, burdened by the weight of their own defenses. The same happened to the Maginot Line. If the nuclear sector has a good chance to be heard in the debate on Argentine nuclear policy, that chance resides in great measure or the use of initiative and also on creativity. The generation of ideas is an imperative, particularly when for more than 30 years the ideas came from Liber ador and Ramallo. This the egg laid by the ostrich.

8908
CSO: 5100/2141

MINISTERS' VIEWS ON NUCLEAR PLAN CRITICIZED

Buenos Aires ENERGEIA in Spanish No 46 May 84 pp 73-74

[Article by Martin F. Yriart: "Nuclear Energy: If the Elms Grew Pears!"]

[Text] "This is happening to us because the president of the CNEA /National Atomic Energy Commission/ is not a Radical." This phrase is attributed to Minister of Public Works Roque Carranza, stung by the unexpected reply he received last 31 May after the dinner with which the Argentine Nuclear Technology Association (AATN) celebrated the National Day of Atomic Energy. Strangely, Carranza chose that forum to air his opinion that nuclear energy does not have any great future in our country, at least during the rest of the century.

Engineer Alberto Constantini, the chief of the CNEA, who spoke before him, ignoring protocol and the slight difference in rank separating him from the minister, stood up and, as they say in the vulgate, "shut his mouth." Carranza withdrew offended and Constantini once more put his hand in his pocket where he carries--they say--his sealed resignation.

The 31st of May was also strangely chosen by Secretary of Energy Conrado Storani to cast more doubts on the future of nuclear energy in our country in a friendly interview granted to the daily CLARIN in a special supplement for which the companies of the Argentine nuclear sector paid generously (Bravo CLARIN!).

At the same time, his predecessor in the office of the second floor of Diagonal Roca 650, Dr Alietto Guadagni, used the pages of the Catholic monthly, CRITERIO, to oppose his own objections to the development of nuclear energy in Argentina.

Cleaning up the House

The persistent antinuclear opinions of Carranza and Storani, which clearly clash with the party platform of the UCR [Radical Civic Union], appear to reveal more and more the existence of an internal squabble within the Radical movement and between it and its last minute allies: Democratic Action of Dr Pablo Gonzalez Bergez. "If the president of the CNEA were a Radical," say some, paraphrasing the statement by Carranza," nuclear energy would be a priority." Actually the interpretations circulating on this unusual situation in which nuclear energy has become the specter at the feast of the energy sector are on the following hypothesis:

1) Constantini is a conservative. He was placed by Alfonsin in that post a) to return a favor, or b) to embellish his team with a figure of prestige; or c) because he did not have an obvious Radical candidate on hand. At any rate, his minions want the head of Constantini, whether it be for no other reason than to put a friend in that position. In that respect, Storani, chairman of the national convention of the UCR, would have good use for that job.

2) The position of the CNEA in the government table of organization outside the jurisdictional area of the Secretariat of Energy is a source of jealousy and resentments, the natural consequence of the need to make planning of energy spending compatible with another branch of the administration.

3) Bereft of political protection (for the two reasons previously mentioned), the budget of the CNEA (which under normal circumstances this year should be around $1.5 or $2 million) is a tasty mouthful for the feudal barons who cut and share the pie of the national budget.

Budget Subsecretary Alberto Rodriguez Giavarini--if one believes the words prominently published by LA NACION on Sunday 24 June--exhibited the reduction in the CNEA budget for 1984 as a great trophy: it represents .55 of 1 percent of the Gross National Product, which does not prevent the national budget deficit from being 10 percent of the GNP. What he did not say is that this victory of the clever Radical planners represents an unrecoverable loss of $400 million for the country, the amount by which the cost of the investments being made in the Nuclear Plan has increased (basically Atucha II and the Arroyito heavy water plant). And how many gas pipelines Storani could build with that money! Obviously not one kilowatt-hour of electricity is produced with gas pipelines. But how many Radical friends of Mendoza and Neuquen will see electoral promises kept and how many gas meters will be installed in the homes of future Radicals!

The foolish remark by Carranza, which led to the unprotocolary reply by Constantini, was to say that nuclear energy has no importance in the total of Argentine energy reserves by comparison with the other sources.

According to the minister, it represents only 15 percent of them. The children in the second grade of the Carlos Pellegrini School, who have already read the "Economic Geography of the Argentine Republic" by Federico Daus, know that the hydrocarbons we now have will be happily used up at our present rate of consumption before the year 2010 and that there remain only 18,000 megawatts of hydroelectric power to be exploited and that the majority of these reserves consist of small sources of less than 1000 MW, all of them invariably far from consuming centers.

At this time the estimated reserves of uranium (30,000 tons certified and another 250,000 tons probable) will allow the fueling of 75 powerplants of the size of Embalse or Atucha II for a period of 30 years each, a total of 52,500 MW of power, without taking into account that an installed megawatt of nuclear power is the equivalent of three hydroelectric megawatts (because

of the difference in efficiency) and that in the previous calculation the recovery of plutonium and uranium 238 (which double the energy content of natural uranium) and the 20-percent increase in efficiency allowed by the low enrichment system achieved in Pilcaniyeu are not included. Mr Minister, why do you order your speeches from Dr Juan Aleman?

Storani, in turn, called once more upon his already exhausted satirists and allowed himself to say that nuclear technology should continue to be developed but that no new powerplants should be built. This is more or less the same thing as proposing to build a car without wheels or motionless gymnastics. Technology is not an abstract thing nor a laboratory invention. It is developed by producing, just as movement is demonstrated by walking. To arrive at the year 2000 with our own technology in nuclear matters, something not even the recalcitrants dare deny, it is necessary to maintain a minimum program of powerplants that will allow the building of a nuclear industry and engineering capable of movement without imported crutches.

A Necessary Energy Savings

That is what should be recommended to Dr Alieto Guadagni, who is known as a respected economist but a palpable neophyte in matters of nuclear energy. No, Doctor Guadagni, the kilowatt/hour at Embalse does not cost 74 mills, as your note says, but 37.8 as you would know if you read ENERGIA (No 44, March 1984, pp 1259-1260), a cost which is well below that of five of the 14 hydroelectric plants you advise should be built, at the same cost as that of four others and very much below that of conventional thermal plants, whether they be turbosteam or combined cycle, proposed by you.

With respect to the potential of technological development, which you forecast for a possible industry of hydroelectric equipment in Argentina, if you had to bet your life's savings on one of two competitive industries, which would you choose? Would you choose one which in 100 years did not achieve a capacity to develop itself and continues to live from foreign consultants and patents (to the point that in order to supply eight turbines at Yacyreta, it has to give the remaining 22 to the owners of the technology), or one which in only one decade has achieved the capability to design, equip and build powerplants, export technology and deals as equals with the kings of the hill?

Doctor Guadagni, let us save energy!

Finally, because I see it coming, within 10 years none of you, Engineer Carranza, and Doctors Storani and Guadagni, come to me pointing your finger at me and telling me that Atucha II cost more than budgeted originally and that the kilowatt-hour it produces is horrendously expensive. The extra $400 million that must be paid for Atucha II are the consequences of the decisions you made when you were in government.

We, the users, will pay them promptly, kilowatt by kilowatt, until the hour of our death, Amen!

8908
CSO: 5100/2141

ORDINANCE PROHIBITS NUCLEAR DUMP SITE IN PATAGONIA REGION

Buenos Aires LA NACION in Spanish 22 Aug 84 p 18

[Article by Estanislao Castro: "The Nuclear Dump and Elephants on Avenida de Mayo"]

[Text] El Bolson, Rio Negro--A few days ago there appeared a small news item, almost unnoticed by the not too careful reader, in the Buenos Aires newspapers. It referred to this locality and it said: "The president of the municipal council of El Bolson approves and passes with the force of an ordinance a ban in the area of the municipality on the extraction, movement, processing, storing or warehousing of uranium, any radioactive material, any material which may be used in the nuclear cycle or its radioactive wastes."

The ordinance arouses curiosity. The same curiosity that would be aroused if the mayor of the city of Buenos Aires were to approve one which would order a ban on the traffic and parking of elephants on Avenida de Mayo.

The Origins

It would be well to ask, therefore, the reason for such an order. What has originated it? That is precisely what we did. We asked the president of the Municipal Council of El Bolson, Hugo Luis Raimondi, about the ordinance in question.

"It had its origins," he said, "in a proposal by the local ecological society, which the council took an interest in, and it formed an analysis committee with municipal and ecological delegates.

"Despite the fact that nothing is happening here, and perhaps will never happen, we have heard that only 200 kilometers from El Bolson in the Department of Gastre (Chubut), a nuclear waste dump is being built, initiated during the previous administration. There is little information available on the subject but we cannot understand how the people of that zone have not exercised a more effective opposition to the project. We have not passed the ordinance only because El Bolson could possibly be a place through which nuclear wastes for Gastre may pass. The subject goes deeper than that because we do not want the same thing to happen here as in Gastre, and basically, because we have declared ourselves in favor of life. With the ordinance which has been approved, we have tried to contribute our small share, but we hope that it will not limited to the municipal area."

Complex Project

In turn, the president of the local Ecological Society, Architect Oscar Silverman, who is also the secretary of public works of this community, says: "We know that the repository of nuclear wastes is a complex project requiring in-depth geological studies. This would be a matter of a hole approximately 400 meters square by 500 deep, and the appearance of any water table, fractures and so forth would ruin the project. We know that water has shown up there. It is supposedly a so-called 'geological lentil' which means that this water is isolated with no chance of leakage.

"At any rate, we do not know what degree of safety will be maintained in the work and whether the water could come in contact with other water tables and transmit radioactivity to other places. All this is uncertain, since information provided is very scant. Neither do we know whether this dump will be used only by Argentina. Apparently nuclear waste from other countries could come there. This is being handled secretly. There is not enough nuclear waste in our country to justify that construction. In that respect there is no official confirmation but neither are there denials.

"The Ecological Society informed itself properly before making the proposal to the council and it found out that before the repository can be used, a prior process must be gone through with the waste, which means, for example, a vitrification plant for the lithiums of the material. This plant does not exist in the country and would require the construction of that plant. However, there may be the case that some countries do have one and may send those nuclear wastes over here where they will not have to be subjected to those specific processes.

"Specifically, the fact that there is a project and that it is underway with the construction for nuclear wastes indicates that it is the intention of the National Atomic Energy Commission [CNEA] to carry it out. Generally, the activities in atomic energy do not even go through Congress. They are an absolute decision of this committee or of the president of the nation.

Importance of Discussion

We believe, however, that it would be very important for these subjects to be discussed. We do not believe it is necessary that the people know the details of the manufacture and enrichment of uranium but we do believe that they have the right to participate in the election of the energy sources the country is going to use, particularly in a subject so controversial as this one, with dangers to human life posed by the present state of development of atomic energy. We emphasize the present state of development because perhaps within 15 years so much progress shall have been made in that aspect that it will no longer pose the danger it does at this time.

"We explained in a campaign what nuclear energy means: how uneconomical it is, the problems it brings and we emphasized that it generally hides military purposes and objectives which are not the production of energy. The countries most advanced in energy matters are using less and less nuclear energy. Sweden, for example, is not building any more powerplants and has a plan for deactivating them that will conclude in 2010, when the last one will cease to operate. In the United States, contracts for the construction of those types of energy sources were cancelled. It is worth indicating, finally, that Patagonia at this moment is 'exporting' 98 percent of the energy the rest of the country uses and it is unfair that after providing this service it should be used as a dump for something unwanted."

8908
CSO: 5100/2141

BRIEFS

PRC NUCLEAR EXPERTS VISIT--Lin Zongtang, PRC vice minister of the State Economic Commission who is leading a delegation made up of nine experts in nuclear affairs, is currently in Argentina. This visit is in keeping with China's interest in expanding its contacts in the field of nuclear technology in view of its desire to step up the use of nuclear energy for civilian purposes. With this in mind the Argentine Government has set up a broad agenda of visits which includes Atucha I and Atucha II nuclear plants; the Pescarmona Metallurgic Industry in Mendoza Province; the Bariloche Atomic Center and the Bariloche Applied Research Corporation; the Embalse Nuclear Power Plant in Cordoba and other enterprises in this province which are manufacturing components for the atomic industry; and the Ezeiza Atomic Center. Vice Minister Lin Zongtang and his technical entourage will also hold talks with Argentine counterparts to exchange information with a view to establishing technological and economic cooperation. Certain Argentine circles have expressed optimism about the possibility of cooperating with the PRC in this field, because this nation is interested in developing several civilian projects for the use of nuclear energy, with which Argentina could cooperate. The PRC delegation is scheduled to leave for Brazil on Thursday, 30 August. [Text] [PY271527 Buenos Aires LA NACION in Spanish 25 Aug 84 p 4]

CNEA OFFICIALS RESIGN--Eight of the nine directors of the National Atomic Energy Commission (CNEA) presented their resignations yesterday to protest internal management policy but CNEA Chairman Alberto Constantini claimed there was no crisis and said he would refuse all but "one or two" of the resignations. Reports said the eight protesting directors had held a long-standing feud with Constantini over in-house policy and had run into disagreement with "one of Constantini's sons who serves as logistics director and coordinator of the executive board." [Text] [PY101735 Buenos Aires AIRES HERALD in English 8 Sep 84 p 7]

CSO: 5100/2143

BRIEFS

TESTING OF ANGRA I--The Angra I nuclear powerplant has returned to full-load operation after undergoing this weekend load-rejection [rejeicao de carga] tests as its output was reduced suddenly to 90 percent and later to 50 percent. Furnas Centrais Electricas has reported that the tests have been successful but the date of the final tests during which the powerplant will operate at maximum load for 100 hours has not been set yet. At this point, it is being checked whether the fuel consumption is in keeping with specifications. Once the final test is over, Angra I will be considered accepted by Furnas. [Text] [PY210338 Sao Paulo FOLHA DE SAO PAULO in Portuguese 19 Sep 84 p 7]

TANGREDO NEVES DISCUSSES NUCLEAR ISSUE--FOLHA: And the Brazilian atomic bomb? Neves: I don't believe in it. Brazil must try to develop as much as possible as far as nuclear technology is concerned. We must keep pace with the evolution of atomic science in all its facets and stay abreast of what is being done around the world. If it is for peaceful purposes that an atomic bomb will be built, the price to be paid is too high. We have other instruments that have been developed by our industrial activities to serve our peaceful ends much better than an atomic bomb. Moreover, an atomic bomb for military purposes would be useless for Brazil because it does not have anybody to use it against. FOLHA: And the Brazilian nuclear program? Will it be continued, reduced or suspended under your government? Neves: We know that our nuclear plants have flaws and are defective. This program must be reviewed, especially the financial part of the program that is estimated at $30 billion, if my memory serves correctly, and just the size of this financial obligation is sufficient to have the program reconsidered and made compatible with our needs for resources. [Democratic Alliance presidential candidate Tancredo Neves interview by Boris Casoy of FOLHA DE SAO PAULO on 19 September in Brasilia] [Excerpts] [PY260340 Sao Paulo FOLHA DE SAO PAULO in Portuguese 23 Sep 84 pp 8, 10]

CSO: 5100/2001

BRIEFS

HIMALAYAN URANIUM FIND--Bangalore, Sept 3 (PTI)--Preliminary investigations have indicated the presence of "highly anomalous" uranium content in Himalayan granites, according to Mr G.R. Narayana Das, regional director, Atomic Minerals Division. Further studies relating to the younger granites with electron probe technology were needed, Mr Das told the Geological Society of India here yesterday. Mr S.A. Pandit of the Department of Atomic Energy, said that central Himalayan granites contained 60 to 80 ppm (particles per million) of uranium, while the waters from "geothermal holes" in the Ladakh region had 100 ppm. Indian uranium deposits in the secondary environment included quartz-pebble Conglomerates in Bababudan, Karnataka, marine black shales in Udaisagar, Rajasthan, and the epigenetic sandstone types in Kerala. To explore the mineral economically, research on newer techniques like delayed neutron logging and low-energy gamma-ray spectrometry was on, he said. [Text] [New Delhi PATRIOT in English 4 Sep 84 p 5]

PLANS TO ATTACK PLANT DENIED--New Delhi has described as utterly baseless and ridiculous a news report broadcast in the United States that India is planning to attack the Pakistan nuclear installations. Official sources say that India is primarily interested in normalization of relations with Pakistan. The American Broadcasting Corporation in a nationwide telecast has said that the Central Intelligence Agency had told a group of U.S. senators that India had a plan to destroy Pakistan's nuclear installations. [Text] [BK150726 Delhi Domestic Service in English 0240 GMT 15 Sep 84]

CSO: 5100/4748

JORDAN TIMES ON UTC NUCLEAR DEAL WITH PRC

JN120906 Amman JORDAN TIMES in English 12 Sep 84 p 7

[Article by Iain Jenkins, Middle East Economic Digest (MEED) reporter]

[Text] London — A little known overseas Jordanian company may be poised to pull off one of the most bizarre business deals in the history of the nuclear industry.

Amman-based United Trading Company (UTC) claims it has been appointed to act as managing contractor for four nuclear power stations in China, on which Western interest has focused for more than 10 years.

UTC is owned by members of the Amman-based Hajjar family, businessman Tawfiq Tabba and Lieutenant-General 'Abd al-Hadi al-Majali, a former Jordanian chief of staff and ambassador to Washington. Al-Majali is also a director of Defence and Security International, a Cyprus-based company set up in spring 1984 to provide security services to Middle East clients.

UTC, which lists its main activities as trading, contracting, and acting as an insurance and travel agent, openly admits it has no experience of nuclear power work.

But in a two-hour interview with MEED at UTC's U.K. head office in Leatherhead, Surrey, senior executive Radwan Hajjar affirmed that the company "had secured a firm and final contract for four nuclear power stations in China with around $7,000 million."

Radwan, brother of UTC President Taj Hajjar, said the order was signed on July 31 with China's Water Resources and Electric Power Ministry, following about 12 months of negotiations.

He added that UTC would do none of the construction work itself. "We are novices in the nuclear field... but that is not a handicap. We have the management skills and will subcontract out all of the work," he said.

The news that a company with no nuclear experience has won such a contract has sent shockwaves through the industry. But MEED's inquiries in Europe, the U.S. and the Far East have provided evidence to support UTC's claim.

Some European contractors say they have seen the contract and are already negotiating with UTC. So far, there has been no independent confirmation from the Chinese.

UTC says it is looking to European contractors to supply the technical know-how to build the stations, of which three will have two 900-MW units, and the fourth a single 700-MW unit.

But UTC, and its financial adviser, Jordan's Petra Bank, are also seeking export credit ... and it is finance that will probably determine who eventually wins the orders.

Beijing-based Bank of China has undertaken to guarantee all finance, provided the interest rates on any credit are below about 6 1/2 per cent.

Swiss companies have been quickest off the mark so far as putting a package together is concerned.

Brown, Boveri and Company says it is having talks with bankers, UTC and Sweden's Asea Atom, with which it is considering forming a consortium.

Any packages would then be considered by a joint Jordanian-Chinese company ... to be set up soon ... which would piece together the most attractive elements.

UTC's contract is in two parts. The first concerns the two by 900-MW Guangdong pressurised water reactor (PWR), on the China/Hong Kong border.

The U.K.'s General Electric Company (GEC) and France's Framatome, which have been negotiating for its supply and installation since 1980, should not be affected, however.

UTC emphasises that its contract does not cover conventional and nuclear islands, and so should not upset the two European firms' talks.

The remaining three stations ... also probably PWRs ... are covered in the second part of the contract.

It is not yet clear whether one of the stations involved is a plant in Qianshan, Zhejiang Province, for which West Germany's Kraftwerk Union has been fruitlessly negotiating since 1976.

One of the main reasons for Beijing's decision to opt for UTC seems to have been the lack of headway made in talks with European and U.S. companies and governments.

According to Radwan Hajjar, the Chinese were "tired of the long drawn-out negotiations," and turned to UTC to speed up the process.

For providing management skills, it is understood that UTC will receive a performance-linked management fee. The quicker it finalises a package, the more money it will get - and Radwan Hajjar is already talking about putting a deal together before the end of the year.

The power facing the nuclear industry is: Why should China have selected a Jordanian-based trading company with absolutely no experience? According to Radwan Hajjar: "We simply took the initiative to approach the Chinese... They liked us, and they liked what we proposed."

There are also suggestions that UTC's case may have been helped by its connections in the Arab financial markets.

However, Hajjar says his company won the contract on merit, and on the basis of smaller deals it has concluded with China in the past.

Nevertheless, most nuclear specialists are astonished by the deal. Some remain openly sceptical.

One company official told MEED: "I have recently been in China where I spoke to the Water Resources and Electric Power Ministry. There was no indication of any such contract."

But other European contractors and suppliers claim to have had meetings with UTC, government officials in both the U.K. and France also confirm that they have been approached about the scheme.

One company, which says it has seen the contract, said: "Had it been anyone other than the Chinese who were involved, we would not even have agreed to see the Jordanians."

It believes the deal may still not go through, however. "The Chinese are shrewd negotiators," it adds. "They will see what the Jordanians come up with. In the meantime, they will continue direct negotiations with companies and governments - they are just broadening their options."

U.S. companies seem to have been left out of discussions entirely.

The apparent reason is that while Congress is now considering a bill to relax restrictions on trade with China, it is not expected to be passed for six months, at least.

China has plans to build up to 10 nuclear power stations by the turn of the century. To date, talks have been held about two only - at Guangdong and (Quinshan).

At present, annual power output is 327,000 KWH, the nuclear programme is designed to increase installed capacity by 10,000 MW.

Since 1977, when China and Jordan established diplomatic links, relations have been improving steadily.

Following King Husayn's visit last September, a trade agreement was signed; China's head of state Li Xiannian visited in March this year. [as published]

Accompanying this improvement in the political relationship has been a gradual increase in trade.

In 1983, China's exports — mainly of textiles, canned food and chemicals — totalled $32 million. Jordan sold goods, including phosphates and potash, amounting to $37 million.

In addition, five Chinese companies are working in Jordan on contracts totalling an estimated $100 million.

As Beijing has still released no information about the deal, UTC, too, is staying pretty close-lipped, to avoid offending its sensitive client.

Until China does make some announcement, many questions will remain unanswered. In the event, the contract could turn out to be worth less than the paper it is written on; on the other hand, it could prove to be a new, and unique, way of speeding up China's acquisition of nuclear power.

CSO: 5100/4509

NUCLEAR PROGRAM DEFENDED, CRITICISM ASSAILED

Rawalpindi THE PAKISTAN TIMES in English 1 Sep 84 p 9

[Article by Kalim Akhtar]

[Text] According to a PPI report that appeared in the national press, a seminar on Pakistan's nuclear programme, sponsored by Congressman Edward Markey of Massachusetts, under the auspices of the "non-proliferation task force" was organised the other day at the Russell Senate building. The purpose of the seminar was to analyse Pakistan's nuclear capabilities, and the panel included Senator Cranston, Georgetown University Strategic Centre's Rodney Jones, Wilson Institute's Jar Schneider, etc., etc. This seminar was triggered by Senator Cranston's recent statements on Islamabad's nuclear capabilities and his decision to move an amendment to the U.S. Foreign Aid Bill proposing a cutoff in military assistance to Pakistan.

For its part, Pakistan has done its best to dispel the misinformation spread by antagonists like Senator Cranston and a host of others that Pakistan has been engaged in developing a nuclear bomb which the Muslim world will use in a holy war against Israel or India. It challenges his selective morality, which picks on Pakistan but takes no congnizance of others who have already acquired the capability, like India, Israel and South Africa. Despite rebuttal of these false assumptions on several occasions in the strongest possible terms, the anti-Pakistan movement about its nuclear weapons capability is gaining momentum day by day, although any person with little general knowledge of nuclear science and technology will understand that the laboratory plutonium reprocessing facility of Pakistan is too small to produce enough material over a long period, even for a single device.

Now the question arises as to why Pakistan has embarked upon its modest peaceful nuclear programme. The answer is simple. Like a large majority of the Third World countries, Pakistan is energy deficient and energy security has assumed a very grave problem for her. On a per capita basis, the estimated fossil fuel resources in Pakistan amount to only three per cent of the world average which tantamounts to the fact that Pakistan, like other oil importing countries, is indeed the worst hit. The projected yield from the available sources, including those yet to be harnessed, is not expected to fill the huge gap by expensive imports. Besides, Pakistan has certain basic problems of development, namely, low agricultural productivity, inadequate health facilities to combat certain diseases, and weak scientific and industrial infrastructure. Nuclear technology can play a key role in helping to overcome these problems besides accelerating the pace of the overall technological and scientific advancement of the country. She must develop a passionate commitment towards bringing about renaissance of the sciences.

Keeping in view our backwardness and low per capita income, we must impart hard scientific training to more than half of our manpower and pursue basic and applied sciences with 1-2 percent of our GNP spent on research and development with at least a quarter to one-third of this on pure sciences. Therefore, inter-alia, the nuclear power programme of Pakistan is broad in scope and balanced in objectives so as to provide wideranging benefits of the atomic energy to her people. The main causes of low agricultural productivity in our country are low yield per acre and destruction of crops before and after harvesting. Nuclear techniques have been found very useful in evolving improved varieties of crop which are not only high-yielding, but also resistant to diseases and pests.

Aware of the significance of nuclear radiations in agriculture, the Pakistan Atomic Energy Commission has established three nuclear centres for agricultural research at Faisalabad, Tandojam, and Tarnab in Peshawar. Nuclear radiations and radioisotopes also have immense applications in the diagnosis and treatment of certain unconventional diseases. The commission has set-up eight nuclear medical centres in the country which provide facilities of diagnosis and treatment to thousands of patients by using radioisotopes produced in Pakistan. Further, introduction of nuclear energy in the country has provided a strong stimulant for the development of science and technology in the country.

It has had a far-reaching impact on improving the standards of scientific research, developing high quality manpower, raising the level of education and training and the building up of scientific infra-structure which in itself is a very important contribution towards the development of Pakistan. In a nutshell, in Pakistan, nuclear energy, instead of becoming a means of human destruction, is being harnessed for the promotion of the people's progress and prosperity.

Under the circumstances, how can Pakistan afford to have the luxury of abandoning its nuclear programme? Some time back, the chairman, PAEC [Pakistan Atomic Energy Commission] in an article, advocated a "global conference for the promotion of international co-operation" in the peaceful uses of nuclear energy. That Pakistan is now well ahead of many Third World countries in developing peaceful uses of nuclear energy and has still campaigned in the U.N. and other international forums for declaring South Asia a nuclear-weapon free zone clearly speaks for the goals that Pakistan has set for itself.

Anyway, it is a matter of great regret that instead of persuading India, which exploded a nuclear bomb in 1974, to respond to Pakistan's proposals about a nuclear-weapon free zone in South Asia, the long-sustained campaign against her tends to encourage pre-emptive strikes against Pakistan installations. India has constructed her own power reactors, is setting up an experimental fast breeder reactor and is reportedly conducting research and development on a reactor as a submarine power plant and on centrifuge enrichment. Pakistan has achieved only centrifuge enrichment. Even then the world media has raised a hullaballoo against her acquiring knowledge of nuclear science and technology. It goes without saying that Pakistan badly needs the use of atomic energy for its development programme to better the conditions of its teeming millions. Yet, this technology remains a preserve of the Western nations who are reluctant to let anyone enter their orbit, ostensibly to check nuclear proliferation, but in fact to exploit the predicament in which the poorer countries happen to be.

The real purpose behind the persistent campaign against Pakistan to go nuclear is that there should occur a serious breach not only in Pakistan-U.S. relations but also to detach her from other Western countries, thereby to nullify all Pakistan's endeavours to develop its resources through the use of atomic energy for the prosperity of her people, and also to paint Pakistan as a belligerent country which does not deserve any assistance and expose it to the looming danger of its sovereignty. Pakistan is actually cordoned on both East and West, and if its resources, both human and material, are not developed with the latest methods and techniques of sciences and technology she stands nowhere. It is, of course, a matter of great concern for us.

In these circumstances, we have to evolve a strategy whereby Pakistan is not only in a position to defend its frontiers but also its ideology. Inter-alia, one is to avoid over projection of our achievements in the nuclear field. Pakistan has been blessed with capable scientific and technical manpower who can make significant contribution to our manifold development programmes, but they advertently or inadvertently have been indulging in projecting themselves unaware of the serious repercussions. Our national media did not lag behind in publishing their long interviews and also projecting the petty bickerings among themselves. Further the present structural arrangements have cast doubt about our intentions. To quote Mr. K. Subrahmanyam, in his article "Dealing with Pakistan" that appeared in the *TIMES OF INDIA* devolving on the offer of mutual inspection in both the neighbouring countries made by the president of Pakistan, some time back, he pointed out that while in India, all nuclear activities have been assigned under the law to the Atomic Energy Commission and as such all nuclear activities can be monitored by inspecting the installations in the Atomic Energy Department, in Pakistan, this is not the case. The entire range of activities are not under the control of the Pakistan AEC. How then does one determine the installations to be inspected? Dr A. Q. Khan's activities are under the charge of the Ministry of Defence, and it would therefore necessitate the inspection of defence installations. "Will not Pakistan ask for a reciprocal inspection of our defence installations?" Therefore, Indians are suspect of Pakistan's intentions. In order to brush off such doubts and make ourselves the target of the persistent maligning of our peaceful nuclear programme, a change in the structure is worth consideration.

There has been a consistent pattern in the anti-Pakistan propaganda to magnify nuclear attainments in the recent past which is not commendable. In fact, it has incited anti-Pakistan elements like U.S. Senator Cranston and others like-minded to launch a sustained scornful campaign in the Congress and the American media to cripple Pakistan economically, scientifically, technologically and militarily and above all to alienate Pakistan from rest of the world.

CSO. 5100/4750

SUPPORT FOR NUCLEAR POLICY VOICED

Karachi Domestic Service in English 15 Sep 84

[Commentary by Ali Haider]

[Text] As you have heard in the news, in a closed-door briefing in Washington, the U.S. Senate has been alerted to the possibility of a preemptive strike by India against Pakistan's nuclear facilities. As given out by America's second largest network, ABC Television, the briefing was done by the administration and intelligence experts on potential troublespots in the Near East and South Asia. The senators were told that a conflict in South Asia could be triggered by India launching a preemptive attack against Pakistan's nuclear installation. On the basis of the intelligence reports, the senators were briefed that the Indian prime minister is being urged by her military advisers to launch such an attack. As the report adds, the alert to the U.S. Senate followed a host of such warnings from many quarters. They have begun to be taken seriously since Israel made its unprovoked strike against Iraq's nuclear reactor outside Baghdad in 1981. There have been suggestions that Israel might provide the know-how for originating such a raid against Pakistan's installation.

Anti-Pakistan lobbies have been persistently carrying out a vicious campaign of c[illegible]gous lies and fabricated stories against Pakistan's modest nuclear program for peaceful purposes. Sinister motives are being attributed and ominous forecasts made of impending happenings. Time and again Pakistan has made it clear that the use of nuclear energy in the country is an imperative to meet the growing demand of electricity. The country is at present spending 60 percent of its foreign exchange earning[illegible] on the importation of oil. Pakistan is pursuing a peaceful program of atomic energy consistent with its needs and limited resources.

Besides developing nuclear power, Pakistan is placing strong emphasis on the application of nuclear techniques in agriculture, medicine, and industry. The sole aim of the modest nuclear program is to ensure a march toward economic prosperity, which in today's world is a vital factor to achieve stability inside the country as well as contributing to the stability of the region and the world at large.

Preside[illegible]t General Mohammad Ziaul Haq has declared many times that Pakistan's nuclear program is entirely peaceful. Pakistan has always supported the international safeguard system and insists only that there should be no discrimination in its application. As the foreign minister of Pakistan stated on the floor of the Majlis-e-Shoora [Federal Advisory Council], Pakistan has consistently supported the international efforts at the nonproliferation of nuclear weapons [words indistinct] internationally, regionally, as well as bilaterally.

President Ziaul Haq has on a number of occasions observed that Pakistan's nuclear program is entirely peaceful in nature and we have no intention of acquiring or manufacturing nuclear weapons. However, we cannot be expected to mortgage the future progress of our people to the apprehensions of certain vested interests about the nature of our nuclear program. We are determined to pursue our indigenous research and development activities in the field of nuclear technology and to acquire this technology for peaceful purposes. For developing countries like Pakistan, it is even more necessary that they should foster peaceful and tension-free relations, especially with their neighbors, so that they can concentrate their energies and resources on the vital task of development.

Consistent with this objective, Pakistan has pursued a resolute policy of peace and goodwill. We remain firmly committed to promoting mutually beneficial relations with all countries of the world. In our own region, we have striven to strengthen confidence and to promote cooperation with our neighbors. [Words indistinct] it comprehends an implicit acceptance of the equal rights of other states. Their right to political independence, territorial integrity, and sovereign equality, and their right to determine their political, economic, and social system [words indistinct] external intervention, coercion, or pressure.

CATEGORICAL DENIAL BY INDIA ON PREEMPTIVE STRIKE PLAN SUGGESTED

GF251306 Karachi DAWN in English 19 Sep 84 p 7

[Editorial: "The Nuclear Bogey Again"]

[Text] Reports about a possible Indian preemptive attack on Pakistan's nuclear installations will not be taken lightly in this country. Although President Zia has tried to strike a reassuring note and has disclosed that the government has sought clarifications from New Delhi, the matter should not be allowed to rest there. Suggestions of an offensive attack to destroy Pakistan's nuclear facilities have often been made, especially in Israel and India. Earlier, such reports had appeared to be far-fetched and exaggerated given the political, strategic and diplomatic implications of such an action. But in June 1981 Israel set a precedent when it actually carried out with impunity a raid on Iraq's Osirak reactor in Baghdad to destroy it. Now the possibility of such a selective strike being launched by a country on another in the pursuit of the former's geostrategic aims cannot be ruled out.

Pakistan's nuclear programme has come under serious attack in the last few months, and there are powerful lobbies at work in some countries assiduously spreading the myth that Pakistan is working to develop the nuclear bomb. What makes the campaign so sinister is that it is a concerted one and has been so synchronised that the critics of Islamabad's nuclear policy in Washington and New Delhi have joined a chorus on the dangers of nuclear proliferation and the threat to international peace and security posed by the 'Islamic bomb' supposedly being manufactured by Pakistan. In fact, the impression has gained ground that Washington, or at least a section of America's political elites, and New Delhi have some sort of a common purpose in pushing the line about Pakistan's alleged nuclear weapon ambitions. Thus, while the Indian Government and media have quoted extensively from American reports in support of their contentions, the American critics have sought to derive comfort and strength from the utterances and writings of India's spokesmen and publicists. Senator Cranston, who sparked off the latest debate in the United States on Islamabad's nuclear programme, spoke of a regional nuclear war between India and Pakistan in case the latter reached the nuclear threshold. He also referred to the possibility of an Indian preemptive strike against Pakistan's nuclear facilities.

The revival of this controversy, especially India's active interest in it, is most intriguing. Pakistan has repeatedly pointed out that its nuclear programme is designed exclusively for peaceful purposes to meet its growing energy needs. Moreover, Pakistan's bonafides are established by its willingness to sign the NPT [non-proliferation treaty] if India also agrees, to create a nuclear-weapon-free-zone in South Asia and to accept the safeguards on its nuclear installations proposed by IAEA [International Atomic Energy Agency]. The lobbies we have mentioned have adopted a consistently discriminatory approach towards Pakistan. They have never mentioned Israel and South Africa as possessors of nuclear weapons and never bothered to talk of India's own enormous potentialities in this area. As noted by Senator Cranston, the Reagan Administration has on a number of occasions accepted Pakistan's assurances. In these circumstances, New Delhi's sudden interest in Pakistan's nuclear programme is mystifying, especially at a time when the process of normalisation of relations is virtually at a halt and their ties have touched a low ebb. Any Indian strike against a Pakistani nuclear installation would be nothing short of an act of war which could lead to open hostilities. It would, in any case, jeopardise the efforts of the two sides to put their relations on a new footing. It is important that India should categorically disavow any intentions of a preemptive action against Pakistan's nuclear installations.

CSO: 5100/4700

BRIEFS

POSSIBLE INDIAN ATTACK NOTED--The United States Senate has been alerted to the possibility of a preemptive strike by India against Pakistan's nuclear facilities. ABC TV, America's second largest network, has reported that in its closed-door briefing from administration and intelligence experts on potential trouble spots in the Near East and South Asia, the senators were told a conflict in South Asia could be triggered by India launching a preemptive attack against Pakistan's nuclear installations. The experts alert follows a host of such warnings from many quarters. They have begun to be taken seriously since Israel made its unprovoked strike against Iraq's reactor. There have even been suggestions that Israel might provide know-how. [Text] [BK151035 Karachi Domestic Service in English 1005 GMT 15 Sep 84]

ACQUISITION OF TECHNOLOGY SUPPORTED--Foreign press reports that India might attack Pakistan's nuclear installations have caused a wave of indignation among the people and further intensified the determination of the Pakistani people to unitedly counter all external threats. People from various walks of life, including members of the Federal Advisory Council and the provincial councils, elected councillors, and prominent workers of the Pakistan movement have sharply reacted to these reports and extended full support to the government's efforts to acquire nuclear technology for peaceful purposes. They stressed that Pakistan is spending a major share of its foreign exchange on oil imports to meet its ever-increasing energy needs. The country cannot depend on oil imports forever to maintain its economy and industrial development and the acquisition of nuclear technology is a must for it to meet its future energy needs. [Excerpt] [BK160912 Karachi Domestic Service in Urdu 0200 GMT 16 Sep 84]

CSO: 5100/4749

BRIEFS

URANIUM EXPLORATION--Preliminary uranium exploration surveys in Gombe, Bauchi State, have been described by Nigerian Lines, Power and Steel Minister Rilwanu Lukman as "favorable." He said the exploration area would also cover parts of Gongo-la, Borno and Bauchi states. The work is being carried out by the Nigerian Uranium Mining Company, in which the French company Minatom was a 40 percent shareholding. [Text] [Paris AFRICAN DEFENSE JOURNAL in English Jul 84 p 15]

CSO: 5100/54

BRIEFS

FRENCH NUCLEAR POWER REACTOR—The first reactor for the Koeberg Nuclear Power Station, along with its turbo-generator set and the engineering installation that goes with it, has been turned over to EVKOM [Electricity Supply Commission] by the French company which has constructed it and put it into operation. Jan Smith, EVKOM's chairman, said yesterday that as a result of this South Africa has now gotten its first nuclear power unit. The second Koeberg unit, or rather its second nuclear reactor and generating plant, has already been tested. It will probably go into full commercial operation by the winter of next year. According to Mr Smith the French contractor has officially turned over the first set to EVKOM. "Tests with the number one reactor and its generator unit were successfully completed on 21 July. Koeberg One is now in commercial use and it is an important component of the EVKOM system." The nuclear fuel was charged up on 29 October of last year and the critical point was attained on 14 March. Since then tests with systematic higher productive levels were carried out until full production was achieved. Each step was monitored by the Atomic Energy Corporation (AEK). In June the AEK gave its consent for pushing up production to 100 percent. Earlier this month the reactor was issued its commercial operation license. The Council for Nuclear Safety had to be convinced that a license for every stage could be issued at each of the testing stages. [Text] [Capetown DIE BURGER in Afrikaans 21 Aug 84 p 11] 7964

CSO: 5100/53

DRAFT AGREEMENT BETWEEN USSR, IAEA

PM260839 Moscow PRAVDA in Russian 21 Sep 84 First Edition p 5

[TASS report: "Act of Goodwill: Draft Agreement Between the USSR and the IAEA"]

[Text] Vienna, 20 Sep - Talks ended here yesterday between representatives of the USSR and the IAEA on placing some Soviet nuclear facilities -- several AES's and research reactors -- under the agency's control.

As is well known, A.A. Gromyko, member of the CPSU Central Committee Politburo, first deputy chairman of the USSR Council of Ministers, and USSR foreign minister, when addressing the UN General Assembly Second Special Session on Disarmament in June 1982, announced on the Soviet Government's behalf the Soviet Union's readiness, as an act of good will, to place some of its peaceful nuclear facilities, several AES's and research reactors, under IAEA control. In so doing, our country was proceeding from the need to strengthen confidence between states, to further enhance the prestige of the Treaty on the Non-Proliferation of Nuclear Weapons and of the IAEA itself, and to improve the agency's monitoring system.

As a result of preliminary talks a draft control agreement has been agreed upon between the USSR and the IAEA. The draft agreement takes account of the Soviet Union's status as a nuclear power and as a depository of the Treaty on the Non-Proliferation of Nuclear Weapons. The draft is based on a model agreement of the agency's guarantees for states that are parties to the treaty.

The draft agreement will subsequently be submitted for examination by the IAEA's Board of Governors.

CSO: 5100/1

GDR, CSSR DELEGATES SPEAK AT IAEA SESSION

LD262338 Moscow TASS in English 2138 GMT 26 Sep 84

[Text] Vienna September 26 TASS -- Nuclear weapons pose a threat to the very existence of all of mankind. That is why it is necessary to apply all efforts to prevent their proliferation. Such is the main message contained in the speeches of delegates to the 28th session of the General Conference of the International Atomic Energy Agency (IAEA), currently under way here.

The beginning of the deployment of American first-strike nuclear weapons in Western Europe, stressed the German Democratic Republic's delegate, had a baneful effect on the world situation and enhanced the nuclear menace. He stressed in this connection the importance of ending the arms race. The GDR representative said that it is necessary to start the limitation of armaments and disarmament on the basis of equality and equal security of the sides, to reverse the trend towards worsening international relations.

Socialist countries, the speaker pointed out, repeatedly advanced far-reaching proposals directed at restricting armaments and achieving disarmament, especially in the nuclear field. They provide, in particular, for the adoption of the pledge not to be the first to use nuclear weapons, termination of their deployment and a freeze of nuclear arsenals.

Czechoslovakia's representative stressed the need for consistent efforts aimed at preventing nuclear war, strengthening peace and security. He stressed the importance of holding a conference to consider the nuclear non-proliferation treaty, due in Geneva in 1985.

CSO: 1812/3

LAW FOR EXPORTING NUCLEAR MATERIALS AND EQUIPMENT

Brussels MONITEUR BELGE/BELGISCH STAATBLAD in French 10 Mar 81 p 2

[Text] F. 81--342

9 February 1981--Law pertaining to the conditions of export of nuclear materials and equipment, as well as nuclear technology information (1)

Baudouin, king of the Belgians,

Greetings to all, present and future.

The parliament has adopted and we sanction the following:

Article 1. For the purpose of assuring the execution of international agreements relative to the nonproliferation of nuclear weapons, no one may transport, to any of the countries not possessing nuclear weapons, nuclear materials or equipment, as well as nuclear technology information and its derivatives, except for the purpose of peaceful use and under the required controls.

To assure compliance with these conditions, every transfer is subject to prior authorization, delivered by the minister under whose jurisdiction energy falls, after counsel with a consultant commission whose members are designated by the king and which specifically includes the ministers who have economic affairs, foreign relations, foreign commerce, justice, public safety, the environment and science policy under their jurisdiction.

Article 2. The materials, equipment and technological information referred to in Article 1 are defined by the king, in keeping with the international agreements governing the nuclear domain and to which Belgium is a contracting party.

Article 3. The king specifies, through decrees developed by the cabinet of ministers:

1. The conditions for granting authorization mentioned in Article 1. They will be in accord with applicable international security controls and with physical protection requirements;

2. The procedure to be followed in granting authorization;

3. The composition of the consultant commission.

Article 4. The consultant commission may call upon scientists whose assistance is considered necessary for dealing with matters which it needs to understand.

Article 5. Without prejudice to the jurisdiction of officers of criminal investigation, the minister under whose jurisdiction energy falls will appoint agents competent to investigate and determine violations of this law and its implementing orders.

Article 6. Violations and attempted violations of the provisions of this law and its implementing orders are punishable by imprisonment for a period of 1 month to 5 years and a fine of from 100 francs to 1 million francs, or to one of these penalties alone.

In the case of a repeat offense, these penalties may be doubled.

The dispositions of Book 1 of the Penal Code without exception of Chapter 7 and Article 85 are applicable to these same offenses.

We promulgate this law; we order that it be marked with the state seal and published by the MONITEUR BELGE.

Presented in Brussels, 9 February 1981

Baudouin

By the king:

The minister of foreign relations, Charles-Ferdinand Nothomb

The minister of economic affairs, W. Claes

The minister of public health, L. Dhoore

The minister of justice, Ph. Moureaux

The minister of science policy, charged with coordination of policy and environment, Philippe Maystadt

The minister of foreign commerce, R. Urbain

The minister of science policy, Philippe Maystadt

Stamped with the state seal:

The minister of justice, Ph. Moureaux

12666
CSO: 8114/1786

TALKS WITH JAPAN ON ENRICHED URANIUM, REPROCESSING PLANT

Paris LES ECHOS in French 9 Jul 84 p 6

/Article by Jacqueline Mattei, special correspondent in Tokyo: "France and Japan to Intensify Nuclear Exchanges"/

/Text/ France's trade deficit with Japan reached Fr 12 billion in 1983. It is headed for Fr 15 billion in 1984. "It is not enough to decry the imbalance, it is necessary to propose cooperation in the areas where we are strong"; Laurent Fabius, visiting Tokyo, emphasized advanced French techniques. Special emphasis was on three cards to be played: nuclear, space, telecommunications. Success was varied.

The most important card is nuclear. The chances for success are greater since cooperation already exists there: Japan has already signed a uranium enrichment contract with Eurodif and a nuclear waste reprocessing contract with Cogema at La Hague. All of this represents a revenue of Fr 2 billion, or one-fourth of French exports to Japan.

The increasing magnitude of the Japanese nuclear program--25 power stations are in service, 19 under construction, and the nuclear share in electricity production rising from 19.5 percent in 1982 to 39 percent in the year 2000--offers a good outlook; although this is accompanied by the desire to establish a completely indigenous supply channel, extending from a construction plan for an enrichment factory and a reprocessing factory to research on fusion using lasers.

Cogema is presently negotiating with Japan to increase deliveries of enriched uranium from Eurodif with the revision currently in progress (it should be done by October) of an enrichment contract between the United States and Japan. The American contract covers 10 million UTS /expansion unknown/ per year (while that of Eurodif is for 1 million UTS). But the prices are high. The United States does not want to lower its basic price schedule and is offering a 30 percent flexibility, or 3 million UTS for which Eurodif would gladly take the place of the Americans. This is a stake in the order of Fr 2.6 billion.

Desire for Independence in Space

In the intermediate term, France hopes also to take part in the construction of the reprocessing plant for which Japan will soon determine a site. The engineering

contract could be granted next year. And the General Company for New Technologies (engineering division of Cogema) expects to be included in the project.

"The area most open to cooperation is the nuclear area. In space and aeronautics, we must attempt to play our trumps," admitted Laurent Fabius after a number of discussions there. France would like to persuade Japan to make use of the European rocket Ariane to launch a certain number of satellites and hopes to sell the Meteosat satellite: the proposal made by the Europeans (15 billion yen, or Fr 550 million) is 30 percent to 50 percent less expensive than the U.S.-Japan project. But the Japanese are very divided on this issue. The Japanese Meteorological Agency took the initative in consulting the Europeans, but a number of groups involved in the project hope to develop nationally based solutions.

Americans Favored for Telecom

France's greatest disappointment may well lie in the telecommunciations area. The coming deregulation of the Japanese market--in April 1985, if the Diet approves the governmental plan to open the national network to competition and privatize Nippon Telegraph and Telephone /NTT/--is arousing aspirations in Japanese private industry as well as in the American giants (ATT and IBM). France would like to reap a portion of this manna and is attempting, albeit a little late, to make itself known. CGE is going to open an office in Tokyo in October; the general management of Telecommunications is preparing to do likewise.

But the chances of French companies seem slim. Competition is fierce and Japan is opening up its market primarily in response to pressure from the United States which has become upset upon seeing its telecommunications exchanges with Japan result in a deficit. That is to say that the Americans will be privileged suppliers. "For French companies, the best strategy is to emphasize software": that is the advice given by Mr Watanabe, NTT's director of international affairs. NTT is reluctant to share: "In the realm of electronic communication, we have very high quality devices. France would find it very difficult to compete." Nevertheless, if the French are interested in certain research projects of the Japanese firm, they may make contacts for possible cooperative future developments: NTT, it must be said, has begun accepting projects submitted in English.

Few large contracts can be expected as a result of this visit to Japan by the minister of industry and research. But France is placing its pawns for future play. The Japanese, faced with increased protectionism in their foreign markets, are beginning to understand the advantages of trade reciprocity. The United States, of course, has greater arguments at its disposal than Europe to make them accept this lesson.

But Mr Abe, minister of foreign affairs, seems to have approved of Laurent Fabius' leitmotiv: "It is in the interest of Japan to have an industrially and commercially strong Europe."

12666
CSO: 5100/2585

EXCERPTS FROM 1983 CEA ANNUAL REPORT: MILITARY APPLICATIONS

Orsay LA GAZETTE NUCLEAIRE in French Jul-Aug 84 pp 14, 15

[Excerpts] Natural Uranium Production

Exploration--Due to the unfavorable condition of the uranium market, the 1983 financial effort allocated by all the French mining companies to explore for this metal, has retrenched considerably with respect to 1982. Nevertheless, it is still very large.

In France, this exploration remains very intense (about 350 million francs). It is localized especially in the Massif Central and the Massif Armoricain, and in the northern center of the Bassin d'Aquitaine. The total area for requested and granted search permits reached 12,917 sq-m on 1 January 1984. The results of exploitation projects have counterbalanced the extracted tonnage, and the known resources of uranium have thus remained nearly stable at around 120,000 tons.

Abroad, French companies maintain a very diversified activity, but their 1983 expenses (200 million francs) have been nearly 30 percent lower than those of 1982.

Exploitation--In France, the 1983 production amounts to 3271 tons of uranium contained in concentrates (2859 tons in 1982).

Abroad, French mining operators are participating in many companies:

In Nigeria, in the Societe des Mines de l'Air (Somair) and in Compagnie Miniere d'Akouta (Cominak), which have produced 1400 and 2000 tons of uranium respectively;

In Gabon, in Compagnie des Mines d'Uranium de Franceville (COMUF), whose production has reached 1042 tons;

In Canada (Saskatchewan), where Cliff Mining supplied 700 tons, using ore from the Cliff D high uranium-content deposit;

In the United States, where Pathfinder, a subsidiary of Cogema Incorporated, produced 800 tons.

The French uranium supplies from these companies amounted to 4160 tons in 1983.

Reactors

Fast Neutron Reactors--In France, the large programs in this field are essentially devoted to the construction of the Superphenix plant at Creys Malville, and to preparations for the next stage.

For the next stage, named Projet Rapide 1500, EDF (French Electric Company) granted a contract to Novatome in July 1983 to formulate a detailed project, whose completion in 1986 will provide EDF with all the information it will need to order one or several 1500 MWe units at the same time as the associated fuel cycle installations.

With this plan in mind, CEA (Atomic Energy Commission) and Novatome have defined all the necessary research and development actions and their deadlines, and have established with EDF the collaboration and coordination structures for harmonizing the respective work and roles of the three organizations.

Concurrently, during September, the Central Safety Service for Nuclear Installations has issued its directives regarding the safety of future plants equipped with sodium cooled, fast neutron, integrated reactors.

At the end of 1982, CEA and EDF with the participation of several engineers from Novatome and Cogema, had created a "design team for advanced fast reactors" (ECRA), which had been assigned the task of examining and proposing significant modifications or innovations, and even a different concept, which over the very long term would make it possible to reduce the cost per kWh in case the economic objective of the industry were not achieved by reactors included in the technical continuity of Projet Rapide 1500. The first phase of study of this team led to the writing of a large summary report in October 1983, proposing many savings steps that could be implemented either in the intermediate future (5-10 years) or over the long term (15-20 years), depending on the magnitude of the research and development work necessary to validate them.

Framatome

The new 1400 MWe N4 model is the subject of delicate negotiations with EDF due to the small number of units requested.

In collaboration with CEA, new models were studied, and preliminary studies were conducted for low-power plants (399 MWe).

In order to protect itself against the foreseeable consequences of a reduction in the French nuclear program, and against the sluggishness of the market, Framatome has started thinking about diversifying its activities. One of these considerations has resulted in the acquisition of an interest in the American company Teknowledge and in the creation of a joint European subsidiary, Framentec, in the field of artificial intelligence and expert systems.

Military Applications

Scientific and Technical Research Programs--The fabrication of weapons with increasingly high performance, requires a sustained scientific and technical research effort.

In 1983, DAM (Military Applications Division) pursued its work in the many disciplines associated with the physics and technology of weapons, where experience is rare and expensive, and where phenomena are at the same time very complex, extremely brief, and characterized by unusual states of matter. In addition to nuclear experiments, these studies require theoretical models and digital simulation methods based on high performance equipment such as the Cray One high power computer, and the Octal 82 laser used for the study of dense plasmas. Although in service for only a short time, this equipment has already led to very promising results. DAM's computing potential has just been reinforced by the acquisition of two new computers, one of them a second Cray One.

In addition, construction is underway for the high power laser Phebus.

Some examples of project results are:

In nuclear physics, an experimental device, Casimir (chamber associated with a system for identifying and measuring reaction ions), was designed to be used at the Ganil accelerator in Caen and at the Sara accelerator in Grenoble, to study the reaction mechanisms involved during heavy ion collisions; it contains large detectors (ionization chamber, counter, microchannel wafer detector, hodoscope, and so on) that adapt to a reaction chamber fabricated in some cases in collaboration with IRF teams at Saclay; the first experiments carried out with this device on accelerators in 1983, has led to interesting interpretations;

A hot isostatic press installation with specifications unique in France, was put in operation; it can reach a temperature of 2000 C and a pressure of 300 MPa, making it possible to shape and process certain materials that cannot be fabricated by conventional means, with significant savings of raw materials;

As part of studies to harden certain sites and equipment against the electromagnetic pulse created by a nuclear blast in air, DAM has designed and developed generators capable of producing high voltage, fast rise pulses; this equipment makes it possible to simulate the effects induced on power lines supplying the installations to be protected, and to qualify specific protection equipment (peak limiting or filtering components and devices);

A system for hierarchical automatic monitoring and control of research installations, Sahir, was developed to assure rapid monitoring and remote control of medium sized, open ended industrial installations (500 sensors or actuators); it includes two microcomputers (8086/8087) for multitasking, and especially for executing control programs, preprogrammed automatic sequences, as well as for managing "control-command-operator" peripherals.

In addition, DAM has carried out industrial exploitation actions.

Tests performed at the Aquitaine Center for Scientific and Technical Studies, to evaluate the effect of air pressure waves produced by the detonation and blast from large volume gas envelopes on structures or structural components, have made it possible to redefine calculation programs aimed at validating the behavior of a nuclear plant under this type of attack.

DAM's Detection and Geophysics Laboratory has built instrumentation for safety seismologic measurements designed to initiate an emergency stop for the Superphenix reactor upon the detection of seismic waves that endanger its operation; these instruments will be put in service at the site during 1984.

Special containers have been designed and built for road or air transportion of dangerous materials (nuclear, explosive, or toxic). Their specifications should make them withstand air accidents and fire.

DAM is also promoting the use of composite materials for its own needs, and has participated in the creation of the new Institute for Composite Materials in Aquitaine.

As part of energy savings, the Study Center of Bruyeres-le-Chatel has constructed a low temperature geothermal installation integrated into existing heating networks. It operates with water collected at 34 C, at a depth of 650-735 m, in a neocomian aquifer little known before this operation. The discovery of the characteristics of this deposit is of obvious interest to the region.

11,023
CSO: 5100/2594

GOVERNMENT, HAUGHEY HIT NUCLEAR LEAKS FROM UK PLANT

'Coverup' Charge

Dublin IRISH INDEPENDENT in English 30 Jul 84 pp 1, 2

[Article by Annette Blackwell: "Sellafield Report Is a Cover-up—Haughey"]

[Text] The people responsible for the Sellafield nuclear plant were accused of a 'criminal' cover-up by the Fianna Fail leader Charles Haughey yesterday.

Speaking on an RTE radio programme he said there was a prima facie case for the closure of the plant.

The comment from Mr Haughey followed the publication last week of an official British report indicating higher levels of leukemia near Sellafield.

He declared: "I thought the report was a dreadful piece of whitewash. If there is a high incidence of leukemia in an area where a nuclear plant is situated, surely to God the obvious interpretation is that the plant was responsible for it.

These figures alone would in my view justify closing down the plant immediately for further investigation and certainly putting a lot of people in jail who have clearly been telling us lies over the past four or five years about this matter."

Mr Haughey said that the report which identified a high incidence of leukemia around Sellafield but did not blame the plant, was a total cover-up.

And he said the British and Irish Governments should take immediate action on Sellafield.

But Mr Haughey was accused of "jumping the gun" by Fine Gael backbench TD, Bernard Allen from Cork who recently led an all-party delegation to the plant.

Mr Allen said there was not a prima facie case for closing the plant. "But there is certainly a prima facie case for reducing the level of nuclear discharge into the Irish Sea to zero and for the British authorities to answer all the questions put to them by concerned persons in Ireland and Britain."

If Britain failed to answer these questions, said Mr Allen, Ireland should take it before the European Court.

Mr Allen said that a new question had arisen recently. "How safe is the plant in the event of a strong earth tremor?" he asked.

He claimed that Mr Haughey's accusations were "premature" until the British authorities had an opportunity of replying to all the questions asked.

But he said there was strong evidence to show that many of the problems which occurred on both sides of the Irish Sea might have been caused by the discharge of waste from the plant.

In the same radio programme the author of the controversial report, Sir Douglas Black defended the findings.

He said he drew a big distinction between actual risk and potential risk. There was no evidence of a high actual risk from Windscale.

"Of course, it was potentially a risk but the preception of that was much higher than it actually was," he said.

He said the risk to Ireland would be very difficult to prove.

Dr Robert Blackitt of Trinity College said that authoritative reports had constantly denied the high leukemia incident which the Black report now confirmed.

He accused the highly-paid public watch-dogs on Sellafield of sleeping. He said many of the people who should have been investigating the nuclear risk had convinced themselves there was none.

He said the proper course of action would be to alert people to the Sellafield danger and bring about its closure.

Continued Pressure on UK

Dublin IRISH INDEPENDENT in English 1 Aug 84 p 1

[Article by Tracey Hogan: "Government Raises Pressure to Cut Nuclear Dumping"]

[Excerpts] The government is to step up pressure on Britain to introduce tougher controls over radioactive discharges from the controversial Sellafield nuclear plant (formerly known as Windscale).

But the Irish public is not in any immediate danger from discharges into the Irish Sea, Junior Energy Minister Eddie Collins declared last night.

This official re-assurance follows the publication last week of a British report indicating above normal levels of leukemia near Sellafield, in Cumbria, and was made after a meeting yesterday between the minister of state and the Nuclear Energy Board.

Nevertheless, the government intends to put further pressure on Britain to tighten up procedures for authorizing discharges from Sellafield and to remove all uncertainties highlighted in the recent British report, produced by Dr Black, of the British Medical Association.

Giving the first official reaction from the Department of Energy to the British report, Mr Collins said the government was still committed to reducing discharges from Sellafield as much as possible and eventually having them discontinued.

The minister said that with the introduction of a new effluent treatment system at Sellafield, later this year, discharges of caesium--the main cause for concern in Ireland--should be substantially reduced.

"The objective of the policies being pursued by the government is to ensure that this downward trend is accelerated," said Mr Collins.

The Nuclear Energy Board's monitoring programme of radiation in the Irish Sea would, said Mr Collins, be maintained with the utmost vigilance.

Sampling and analysis of fish, shellfish, seaweed, sediments and seawater will continue on a monthly basis at ports on the east coast to monitor radioactivity levels.

Praise for UK Legal Action

Dublin IRISH INDEPENDENT in English 2 Aug 84 pp 1, 2

[Article by Tracey Hogan: "Sellafield Prosecution Backed by Minister"]

[Excerpts] A government minister last night welcomed the prosecution of the operators of Britain's Sellafield nuclear plant for leaking dangerous radioactivity into the Irish Sea.

Threat of further contamination of our waters will be reduced, said Environment Minister Liam Kavanagh.

Greenpeace

The environmental organisation in London last night predicted a flood of compensation claims against British Nuclear Fuels in the wake of the director of public prosecution's decision.

Fianna Fail leader Charles Haughey--who earlier this week clashed with Mr Kavanagh over the levels of radioactivity in the Irish Sea--said his position had been vindicated by the British move.

Britain's DPP announced yesterday he was bringing charges against British Nuclear Fuels, owners of the Cumbria plant as a result of a major radioactive leak into the Irish Sea last November.

Mr Kavanagh told the IRISH INDEPENDENT last night he welcomed the disclosure of the leak, and the action taken by the British authorities.

"The implications are, there will be major changes in the operation of Sellafield and a reduction in any contamination will have very beneficial effects for Irish waters."

He repeated an assurance given by Junior Energy Minister Mr Eddie Collins that the radioactivity levels do not pose any health risks for Irish people.

But he added: "We are not prepared to accept this dumping in the Irish Sea."

The government had indicated to the British Government it was totally dissatisfied with the situation and demanded an end to all dumping of nuclear waste products.

CSO: 5140/008

PARTIES STILL DIVIDED OVER SHUTTING DOWN NUCLEAR PLANTS

Stockholm SVENSKA DAGBLADET in Swedish 23 Aug 84 p 6

[Article by Hans O. Alfredsson: "Final Memorandum on Nuclear Power; 'Disagreement Could Result in New Referendum'"]

[Text] There are no serious obstacles to the gradual abolition of nuclear power, but it could cost society 50 billion kronor. The parliamentary parties are still deeply divided on the issue. The Liberal Party does not exclude a new popular referendum.

This is evident from the final memorandum submitted today to Energy Minister Birgitta Dahl by the 1981 Energy Commission. The Social Democrats alone support the proposals of the majority. The other parties register their own reservations.

The study was headed by director general Hans Lowbeer and also included three Social Democrats and one representative of each of the other four parties in Parliament.

The committee proceeds from the result of the 1980 referendum and Parliament's decision to have a 25-year elimination period up to the year 2010. The memorandum concludes with proposals for a number of new studies and the recommendation that emergency preparedness must be maintained in various ways.

Safety Determines

It is pointed out that it is safety which determines how long a nuclear power plant should be allowed to operate. Its age should not matter. The committee finds that the elimination can be undertaken over a 10-year period, from 2000 to 2010, and that a special panel should be charged with specifying the time for each nuclear power bloc. This study should be concluded around 1990.

Electric consumption in 2010 will be between 90 and 150 terawatt hours, according to the evaluations of the committee. This can be compared to about 100 TWh in 1983. The lower limit means that power production must be expanded by 25 TWh when nuclear power is abolished, the upper one that largely all nuclear power must be replaced with other production.

The committee did not find any "decisive obstacles" to the [illegible] parliamentary decision and abolition of nuclear power. But, [illegible] nuclear power is functioning well when it is to be abolished, [illegible] sacrifice will result.

Ten Billion Kronor a Year

The committee members believe that at today's prices and monetary [illegible] cost can be estimated at 5-10 billion Kronor for each year that nuclear power could have been utilized after 2010. The total cost to society could end up being 50 billion. This involves costs which are a direct result of the parliamentary decision.

What is to replace nuclear power? Here the committee carries on a detailed discussion about environment and economy and concludes that hydroelectric power is the cheapest, thermal power next cheapest and solid fuel condensation the most expensive of the established types of power. Seen from an economic aspect alone, electric production should, according to the committee, be expanded in the order of 20 TWh hydroelectric, 5-10 TWh thermal power, another 5 TWh hydroelectric power and then solid fuel condensation.

Wind Power Tried

In general the committee indicates the following principles for the expansion: Preconditions for wind power should be investigated in more detail. The same applies to thermal heat. If additional capacity is needed, it will have to be acquired through hydroelectric and condensation power.

At the same time the committee points out that "problems" could appear "along the way" which could alter the situation. The debate about "the rightness of implementing the abolition decision" is likely to continue until the last nuclear power plant has been shut down, the committee speculates.

In his reservation Conservative Per Unckel completely disapproves of the "fictional year" 2010. He concludes that no year was mentioned in the referendum and that the year 2010 is based on the government's evaluation "which today is being questioned increasingly strongly." According to him this evaluation should now finally be abandoned. He is of the opinion that the study was unnecessary in all essential respects and writes:

Door Open

"Should it turn out that on the issue of abolition itself the Swedish people were later--as the committee also does not regard as unlikely--to arrive at a conclusion different from the one expressed in 1980, all doors to a different point of view must not have been closed or irrevocable damage have been done to the environment."

Nadar Lars (Liberal Party) writes in his reservation that there is [illegible] to question the decision. At the same time he points out that the situation could change rapidly, primarily as concerns the environmental issues.

Reexamine

"In that case we must be prepared to reexamine the comprehensive goal for our energy policy. Then the question of another popular referendum could also become important again."

Borje Hornlund (Center Party) and Per Francke (Left Party [illegible]) criticize the committee for not presenting any plan for abolition. They find that the majority abandoned the 25-year rule and is thereby keeping the door open to a continuation of nuclear power. Hornlund interprets the parliamentary decision as saying that the reactors should cease operation after 25 years at the latest, and a gradual shutdown must therefore begin in the mid-1990's. Any more studies are not needed, in his opinion.

11949
CSO: 3100/2592

EXPERTISE, SAFETY THREATENED AS NUCLEAR PROGRAM WINDS DOWN

Stockholm DAGENS NYHETER in Swedish 30 Aug 84 p 6

[Article by Ingemar Lofgren: "Concern About Inferior Nuclear Technicians, 'Increased Risk of Accidents'"]

[Text] The competence of the Swedish nuclear power technicians is declining. No one enters training programs involving nuclear power any more, since it is to be abolished. With that, the risk of future nuclear accidents is growing.

These are the fears of Gustaf Ostberg, professor of material mechanics in Lund and teacher of reactor materials science at the Institute of Technology in Stockholm.

"I do not want to say that there is a catastrophe as yet, but it is a problem which must be noted, if there is concern for safety," Gustaf Ostberg says to DAGENS NYHETER.

Gustaf Ostberg is a member of the research panel of the Nuclear Power Inspection (SKI). Together with two other researchers he has studied the qualifications of the technicians at the Swedish nuclear power plants.

According to Ostberg, there are signs indicating that their competence is declining. Furthermore, no one wants to enter a profession which is to be abolished in the future.

"It is difficult to prove that assertion, to be sure, but this is the general impression I have after many years as teacher of these subjects."

"According to the guidance offices of the universities, "top students" no longer apply for the technical subjects aimed toward nuclear power," Gustaf Ostberg says.

However, in Gustaf Ostberg's opinion there are methods for correcting the problem. He mentions SAS, Janne Carlzon and personal responsibility.

Competence is not only a matter of formal competence, but also of the right attitude toward work and safety as being the most important; previously, there was too much emphasis on degree of effect and efficiency.

in order to get people to apply for education involving nuclear power, Ostberg wants to invent new career opportunities. The personnel should not have to feel the abolition as a threat, in his opinion.

The declining qualifications of Sweden's nearly 10,000 nuclear technicians should not come as a surprise to the nuclear industry and the Swedish authorities, according to Ostberg.

"In the United States the decline in the development of nuclear power has had major effects in the area of technicians."

At the Nuclear Inspection Agency one partially agrees with Ostberg's fears for the future.

"We see no immediate warning signals and so far we have not had any problems recruiting, but we must definitely keep a careful eye on the problem," says SKI section head Lars Ostberg to DAGENS NYHETER.

As for the career opportunities of the technicians after the abolition of nuclear power, Lars Hogberg believes that there will nevertheless be fields which they can approach.

"But of course that presumes good planning on the part of the nuclear power industry."

11949
CSO: 5100/2592

CRACKS FOUND IN OSKARSHAMN I CORE

Stockholm DAGENS NYHETER in Swedish 1 Sep 84 p 6

[Text] Sweden's oldest nuclear reactor, Oskarshamn 1, has been affected by a second defect this summer. Cracks have been found in a metal construction in the reactor core. It is the mounting bolts that have begun to crack.

If metal cracks and falls into the core, it could cause the control rods which interrupt the chain reaction in the core to cease functioning.

The National Nuclear Power Inspection evaluates the cracks as a serious threat to safety. It is likely that a new mounting construction must be installed.

The Oskarshamn 1 reactor is 13 years old. Is it approaching the end through fatigue from high temperatures and radiation?

"The cracks are an aging phenomenon. Some defects which were detected earlier have been caused by the long operating period. But Oskarshamn 1 is not coming to an end. On the contrary. The unit is functioning very well and will do so for many years to come. Last year the best operating result was recorded," says information chief Carl-Erik Wikdahl to TT [Tidningarnas Telegrambyra].

At the beginning of August a serious incident occurred. The personnel dropped a radioactive fuel element from a height of 10 meters. But no radioactive spill was measured and the element stayed in one piece. No one was injured.

The accident took place during the annual maintenance and reloading with uranium fuel. That accident delayed the restart which was set for the end of August/beginning of September.

The now discovered cracks in the bolts will delay restarting by more than another 2 weeks. The restart will be delayed a total of 3 to 4 weeks.

The loss of income for owner Oskarshamn Power Group, OKG, is expected to amount to between 15 and 20 million kronor. To this must be added repairs and several million kronor for the cost of a new fuel element.

Both defects occurred or were discovered during the annual inspection, when the reactor is shut down with only residual heat from the core to worry about.
11949
CSO: 5100/2592

EXTENSIVE REPAIRS NECESSARY FOR RINGHALS II

Stockholm DAGENS NYHETER in Swedish 1 Sep 84 p 6

[Article by Bengt Lindstrom: "Ringhals to Be Rebuilt at a Cost of Half a Billion"]

[Text] The steam generators at the Ringhals II nuclear power plant need to be replaced. The metal tubes in the generators are corroding and leaking radioactive water into the cooling system.

A decision to replace the generators must be made soon. The generators may not stand up to more than 4-5 years of additional repairs, reactor inspector Frigyes Reisch at the National Nuclear Inspection Agency, SKI, says to DAGENS NYHETER.

Leaks in the steam generators are well-known problems to nuclear power plants all over the world, and Ringhals II has been affected by this type of leaks every year since the startup in 1975.

The constructors first believed in a lifetime of 25-40 years for the tubes, but wear and tear has turned out to be worse than anticipated and by now about 10 nuclear power plants have been forced to replace their generators.

The components of Ringhals II come from U.S. Westinghouse, which is the largest on the world market, but according to SKI it is difficult to say whether the defects in the company's generators are disproportionately numerous.

The defects in the generators are due to corrosion damage. Radioactive water leaks out into the cooling water.

"We have excellent control and know several days in advance when a leakage will occur. We are not dealing with any dramatic breakage in the tubes and it is a matter of small amounts with low radioactivity," Frigyes Reisch says.

"There are about 3,000 tubes in each generator and so far we have plugged the tubes that leaked. The limit to the plugging is 10 percent, then you have to resort to reduction of power."

"At Ringhals we have plugged eight percent at most. Another method we use is to reinforce the tubes with a steel cuff, a casing which is a few decimeters long and which is inserted into the lower portion of the tube."

"We call these methods maintaining a defense. So far it has been enough, as I said, but now it is becoming time to replace the generators."

"Replacing generators is a very expensive and time-consuming job. The labor itself takes about 6 months, and should be done in the summer, when we do not need to produce power."

No Panic

"The costs are somewhere between 500 million and 1 billion kronor. In comparison I might mention that Ringhals each year earns about 500 million kronor from selling electric power."

The decision to rebuild Ringhals II must be made soon, in Grigyes Reisch's opinion. Going out for bids takes time, and it is necessary to scrutinize the various alternatives available on the market before it becomes absolutely essential to replace the steam generators.

"This is not a panic measure," Frigyes Reisch stresses, and Ringhals II is not particularly exposed.

This fall SKI experts and other persons involved are to discuss their experiences from the years of utilizing nuclear power. That will take place at an international steam generator conference in Stockholm, to which 150 international experts have been invited.

"It is essential that we draw on each other's experience," says Frigyes Reisch.

11949
CSO: 5100/2592

NUCLEAR ENERGY ASSESSED FOR DOMESTIC USE, TRANSFER

Istanbul DUNYA in Turkish 5 Sep 84 p 5

[Article by Vural Altin "Turkey And Nuclear Energy."]

[Text] In order to emphasize the vital importance of energy for a people we believe it is enough to point out that a fleet of 1000 40-ton trucks can perform the same amount of work, within a given period of time, as 40 million laborers. Consequently one either has to find fuel for such a fleet or, having renounced all other production activities, one activates the entire population to do the said job or else one inevitably sinks into the mystical gloom of the Middle Ages.

Our fast growing population, which has fast growing expectations, by opting even if not consciously for economic growth, has turned the above alternatives into no alternatives.

After this example related to the sector of transportation, it would be useful to outline Turkey's situation from the angle of production and consumption of electric energy.

As is known, our nation's production capacity of 4,700 megawatts per year, which remains below its present needs, will reach 40,000 megawatts within 20 years with a 7% growth rate. On the other hand, even if our nation by straining the laws of physics were able to add to the circuit, which is feasible from the economic and technical standpoint, 29,500 megawatts from its hydroelectric and lignite resources, 1,200 megawatts from its thermal ones based on liquid fuels and 6,400 megawatts from the capacity of its other power plants by the year 2000 , it will still be faced with a 3,000 megawatt shortage. It does not seem likely that this gap can be closed by such alternative sources as the sun's energy, the force of the winds or bioenergy which can only play a marginal role in the middle term. If one bears in mind that the cost of every unit of energy produced has a 20 times higher economic value when the profit factor is added, it becomes evident that in the matter of energy insufficiency is the greatest potential risk and that, in order to close the aforesaid gap, it appears inevitable that nuclear energy should play the part that falls to it. As can be seen, the view which prevails from time to time among the public that nuclear energy is an alternative to the hydroelectric solution, which can be replenished and is labor intensive and therefore better suited to our economic structure and which, for comparable capacities, requires less foreign financing, is totally

unfounded. In view of our limited economic resources, in a situation where those 2 alternatives might compete, the need to give priority to developing our hydroelectric resources is clear. But, including the above source, no alternative on its own or even the totality of our native resources appears to be sufficient to meet the expected level of demand by the year 2,000.

Objections against nuclear energy in our country regarding projections of the level of demand for the year 2,000 being exaggerated in order to make this alternative necessary, about the inacceptability of dependence on the outside for fuel, about the numerous risks to the environment and the problems that will be generated, about the attempts to foist on developing countries a technology rejected by the nations of the West, about the fact that our level of development does not allow for such a technology and that it will further aggravate our shortage of foreign currency, are all points which must be discussed one by one in order to be clarified.

If we bear in mind that despite increases in capacity which reached as much as 12% annually, the need for cutbacks is still felt from time to time, that extensive rural areas cannot benefit from electric energy yet and that for the capacity increase to spread to those sectors, together with the ability to cater to an economic growth which matches a population growth of 2.6% annually, a reserve capacity of 10 to 15% , beside the usual servites, must be created for the interconnecting system, then we believe that it is possible to understand that a growth rate of 7% is far from exaggerated. No doubt our population will not continue to grow at such a rate and, together with the necessary measures to economize, through selective management of the composition of the economy the amount of energy needed per GSMH [Gross National Product] unit can be decreased. But we must also bear in mind that our country must sharpen its competitive edge and that while sectors such as iron and steel, ship building, chemicals and the automotive industry are tending in the direction of developing countries because they are labor intensive, they are also environmentally energy intensive. At the same time because inadequate and low grade energy production paves the way to a widespread use of regulators and generators, even the roughest calculations related to the damage caused to equipment for the production and consumption of electricity clearly show how expensive a vicious circle penury can be as well as the necessity for the efforts and investments which can be amortized within a short time and which will eliminate the energy shortage that is an important component of the above phenomenon.

While there is some truth in the assertion that an attempt is being made to foist off on developing countries a technology which is no longer acceptable to the West, one can also view this situation as ensuring favorable credit terms. Although out of the nuclear power plants which are functioning today 63 are in the U.S.A., 33 in England, 16 in the USSR, 11 in West Germany, 13 in Japan and 10 in France, despite its widespread use nuclear technology has stopped expanding recently and in the past 3 years there were no new calls for bids in the U.S.A. and also some of the old contracts have been cancelled. In fact similar tendencies in Sweden led to changes in the government and to a freezing of nuclear programs. However, the disillusionment which stemmed from the fact that industrialization did not live up to its premises from the standpoint of human happiness in the case of highly evolved populations and focused on nuclear technology because of the outcry against its military uses, might be viewed as a thought or a feeling that is a luxury for our own people.

It is clear that Turkey will have a hard time in adapting to such an advanced technology as nuclear technology but we believe that our aim, rather than a transfer of technology, is a lease of technology in order to create a partial solution to the energy shortage. Because in the transfer of any kind of technology the aim sought by a nation is either to adapt it, even if it is not profitable, in order to serve a wide domestic market or, because it is labor intensive, to bring a solution to the problem of employment or by improving the transferred technology with brilliant ideas and contributions to enter world markets with an array of competitive advantages, none of which considerations are valid from Turkey's standpoint. Although we believe that there are many more sectors which, from the standpoint of autarchic inclination and prestige, would give our nation better chances to compete and while the cost of this attempt at a transfer of technology will be high, we are also convinced that we have the necessary cadres in our country to implement such a technology with the aim of producing energy and that it can attain an adequate level within a short period of time.

12278
CSO: 5100/2593

NEW ENRICHMENT CONTRACTS, NUCLEAR FUEL IMPORTS NOTED

London THE DAILY TELEGRAPH in English 23 Aug 84 p 5

[Article by John Petty]

[Text] BRITISH NUCLEAR FUELS yesterday reported pre-tax annual profits up from £55 million to £71 million but said its record had been marred by the radiation leak at Sellafield.

Mr Con Allday, chairman, said the incident that left contaminated debris on Cumbrian beaches was much regretted although the risk to the public was very small.

"Very high standards are rightly expected of us," he said in London.

But risks had to be balanced against benefits. The State-owned business had progressively cut its discharge of low-level radioactivity into the sea over the past 10 years. Plutonium discharges had been reduced to one twelfth of the peak level.

"We have £190 million currently committed to achieving further reductions and have already announced a study into ways in which we can reduce discharges to as near zero as possible," Mr Allday said.

Dividend of £16m

Sales last year were worth £460 million, up from £451 million in 1982 with "markets stagnant and severe pressure on prices."

Nuclear Fuels is paying the Government a dividend of £16,300,000 an increase of £3,900,000 on 1982. Its workforce was cut by 600 at 15,500. It is to invest £3,500 million in the next 10 years.

New contracts worth £43 million had been won to enrich uranium at Capenhurst, in Cheshire. Modernisation at Springfields, near Preston, was nearing completion to meet demands from British nuclear power stations. More than 1,000 tonnes of spent fuel from British and foreign power plant was reprocessed at Sellafield.

More than 800 tonnes of nuclear fuel from Japan and other foreign power stations was carried by sea for reprocessing at Sellafield and in France. Another ship to carry fuel was being built at Appledore, in Devon.

CSO: 5140/010

USSR MEETS SOME URANIUM ENRICHMENT REQUIREMENTS

London THE DAILY TELEGRAPH in English 28 Aug 84 p 2

[Article by Roland Gribben]

[Text] RUSSIA is carrying out contracts for the Generating Board to enrich uranium for the fuel needed for some of the State industry's nine nuclear power plans.

About 10 per cent of the Board's needs are met from a long-term deal with Russia, negotiated about six years ago. The contract has several years to run.

The collision which resulted in the sinking of a ship carrying partially treated uranium from France to Russian for enrichment has thrown fresh focus on a trade which provides valuable foreign currency and prestige for the Russians.

The United States is believed to have expressed concern about the security implications involved in the trade, but is understood to have been told that their fears are unfounded.

The Generating Board carries out an audit check, measuring the quantities of uranium sent out to Russia against those received, but does not have access to the Russian plant believed to be near Leningrad.

There is no parallel trade in the more sensitive nuclear waste re-processing which would give Russia access to plutonium needed for nuclear weapons.

The Board regards the contract as a straightforward commercial arrangement. The bulk of its enrichment needs is handled by British Nuclear Fuels and other European companies, but the board decided to opt for a second source to avoid excessive dependence on one supplier.

An official said yesterday: "We did it for the same reason as we import coal. We want to get a competitive edge in our relationship with B N F."

Explosion Risk

The prices quoted by the Russians are believed to be broadly comparable with the B N F levels, but "they vary from year to year."

The Generating Board shipments, like the French, are sent out in the form of uranium hexafluoride, an intermediate stage in the production of nuclear fuel.

The chemical properties of fluoride are essential in the processing stage.

The chemical is added in a six to one ratio to the uranium but while the material at this stage has a low radio activity content there is the risk of explosion in the escape of toxic gas if the containers carrying the material are breached.

CSO: 5140/010

END

END OF FICHE

DATE FILMED

23 OCT 84